

MONTHLY

JULY, 1928

No. 270

HITCHCOCK'S MACHINE TOOL BLUE BOOK

DIRECT MAIL ADVERTISING

to

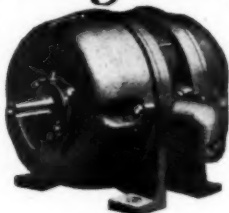
*Industrial Machine Shops
Automotive Plants
Railway Mechanical and
Purchasing Departments*

**AND ALL OTHER
MACHINE TOOL
USERS**

**Controlled Circulation
25,000 Monthly**

Published By
**HITCHCOCK PUBLISHING CO.
508 So. DEARBORN ST.
CHICAGO**

This motor~ *isn't afraid of dirt*



You can put this motor to work without worry about its surroundings. Dirt can't get in. Maintenance will be less and the motor will last longer because it is always clean inside.

The Reliance method of fully enclosing with fan cooling gives protection to the motor windings with low cost. The size of the motor in most cases is no greater than an open motor of the same rating.

No pipes. No complicated construction.

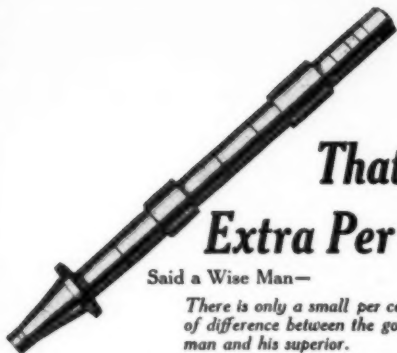
Bulletin 102 gives details.

Reliance Electric & Engineering Co.
1050 Ivanhoe Road, Cleveland, Ohio

Branches: Boston; New York; Pittsburgh; Cincinnati;
Detroit; Buffalo; Philadelphia; Chicago; Birmingham

RELIANCE MOTORS

with Ball  Bearings



That Extra Per Cent!

Said a Wise Man—

*There is only a small per cent
of difference between the good
man and his superior.*

The same can be said of arbors. The K&T Arbors for milling machines have that extra per cent—that difference which sets them above the "just as good".

These Arbors are made with the same extreme precision that has earned recognition for Kearney & Trecker Milling Machines and established them as the standard of comparison.

That extra per cent results from high quality chrome nickel forgings finished to ten thousandths accuracy—not thousandths. New processes toughen and harden K & T Arbors to withstand both wear and impact. Collars too are of extreme precision and collar faces *are* parallel.

The man at the machine will appreciate that extra per cent when he sets his gauges to the work. Test one in your own way—on your own work on heavy cuts or fine high speed work.

They fit any milling machine from 2 to 25 horsepower having the New Standardized Spindle End.

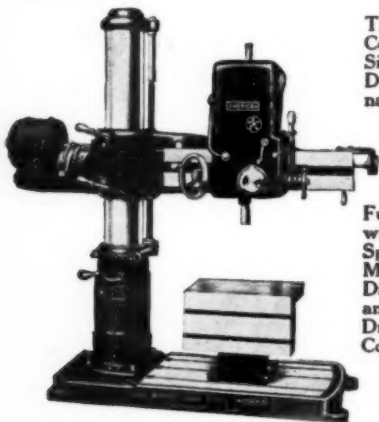
MILWAUKEE MILLING MACHINES
KEARNEY & TRECKER

CORPORATION

5926 National Ave., Milwaukee, Wisconsin

(See page 133 for K & T Re-builts)

Meeting Today's Demands for Speed—Power—Convenience



This shows our
Constant Speed
Simplified Motor
Drive for Alter-
nating Current.

Furnished also
with Adjustable
Speed Simplified
Motor Drive for
Direct Current
and for Belt
Drive thru 4-Step
Cone Pulley.

American Maxi-Speed Sensitive Radial

To meet today's demands and to keep up with or excel competition is your daily problem—a problem that can be answered only by more speedy equipment, improved machines that pile up new records of plant production and cut down your unit cost of operation.

You get just such a machine in the "American" Maxi-Speed Ball Bearing Sensitive Radial Drill—a machine so much more substantially made, so much faster, so precise and reliable that it opens a new field to high speed drilling; a wider range of work, greater output, less cost per unit, fewer delays and less repairs. There is a definite place in your shop for this "American" Radial. Let us show you where.

Send for Complete Descriptive Folder

The American Tool Works Company

Cincinnati, Ohio, U. S. A.

LATHES

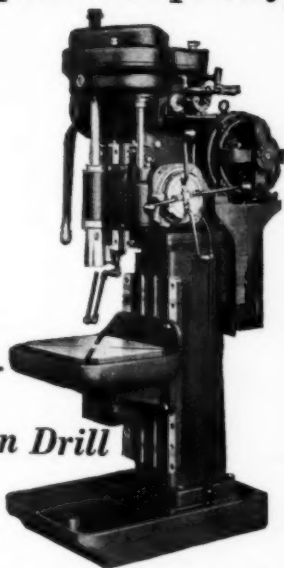
RADIALS

SHAPERS

Single Purpose Simplicity

But with
16 SPEEDS
and
16 FEEDS

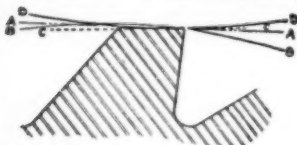
**The SUPER—
SERVICE**
Production Drill



For high production this machine has all the flexibility of a general purpose tool minus all complications. Gears and shafts are of heat treated alloy steel revolving on ball bearings and automatically oiled. Built to produce faster and last longer.

The Cincinnati Bickford Tool Co.
OAKDALE, CINCINNATI, OHIO

Cutting tools last longer—cut better—when properly ground

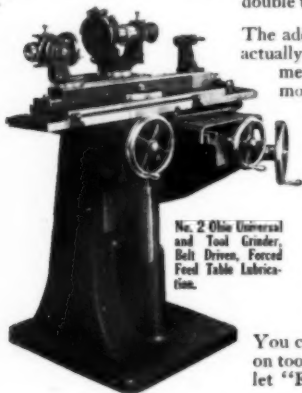


DD represents periphery of grinding wheel, BB circumference of cutter, AA desired clearance as obtained with cup wheel on Ohio Grinder, CC clearance angle obtained using periphery of grinding wheel for clearance.

OHIO Grinders preserve cutter life by correct grinding

MANY cutters pass their stage of usefulness prematurely due to incorrect grinding but proper grinding costs no more than any other.

Ohio Grinders produce a solid backed cutting edge that has double the life of any hollow one.



No. 2 Ohio Universal and Tool Grinder, Belt Driven, Forced Feed Table Lubrication.

The added life given to cutters is actually a saving in cutter investment. These small savings mount rapidly and soon pay for your machine.

It's just as easy to make your tools do more work for less cost, even though the initial investment may be a trifle more.

The sketch above shows the difference between right and wrong grinding of face mills.

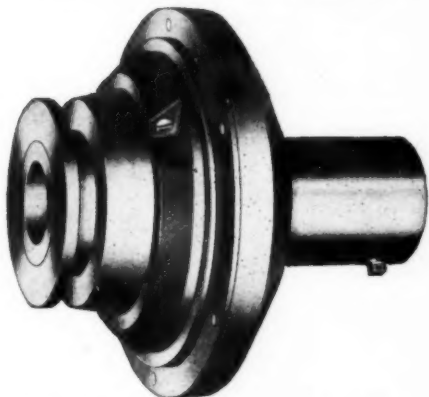
You can get a complete story on tool grinding from our booklet "E."

Write for your copy today.

The Oesterlein Machine Co.
3317 Colerain Ave., Cincinnati, Ohio

The CONWAY CLUTCH

Takes the Lead Again!



The Conway Disc Clutch

Has all the good features of any clutch built with many added points of superiority, and again takes the lead in safety, efficiency, dependability and power capacity. The CONWAY continues to be the superior agency for starting, stopping and transmitting power.

Enclosure, safety, balance, centripetal action, simplicity of design and sturdiness of construction are the outstanding features of the Conway Clutch. It is engaged with slight pressure, releases instantly, and is the easiest disassembled unit made.

We will gladly mail you a copy of our latest bulletin, which pictures and describes this improved clutch in detail.

Ask for Bulletin D. C.

The Conway Clutch Co.

West 6th Street

Cincinnati, Ohio

Cut!
Don't
Scrape

Use

SIMONDS
FILES



Any Old File Won't Do !

YOU and every other seasoned buyer or user of Files know that any old file won't do.

To put a perfect edge on the tempered teeth of circular saws with a cheap file is a hard job. It's just as hard for the mechanic out in the shop to file true with a tool that has irregularities in its surface, poorly formed teeth, or any one of a dozen common file faults. Except on the roughest kind of work it always pays to use quality Files—

SIMONDS FILES

the kind that cut easy and last a long time.

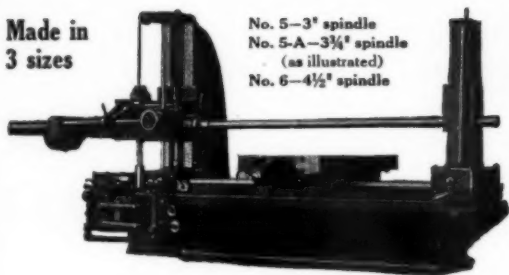
Sold By Leading Dealers

Simonds Saw and Steel Co.

Established 1832

Fitchburg, Mass.

**Made in
3 sizes**



No. 5—3" spindle
No. 5-A—3 $\frac{3}{4}$ " spindle
(as illustrated)
No. 6—4 $\frac{1}{2}$ " spindle

Defiance No. 5-A Horizontal Boring, Milling, Drilling and Tapping Machine

Defiance machines are made to meet every requirement of machine tool users. Their abundance of power and ease of manipulation insures speedy and accurate production in both single and manufacturing operations.

Speed, power and precision are obtained by simplified design and unusual accessibility, which are only two of the many features which add to their dependability under continued hard usage and their ability to do MORE and BETTER work.

Write for the descriptive folder, or for the complete Catalog of "The Defiance Line" of Cylinder Boring Machines, Heavy Service Drilling Machines, Rail Drills, Horizontal and Vertical Multiple Drilling Machines, Multiple Tapping Machines and Valve Grinding Machines.

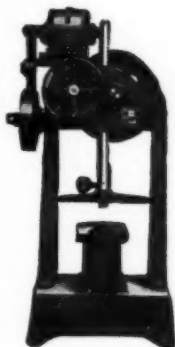
The Defiance Machine Works
Defiance, Ohio

**Designers and Builders of Precision-Production Machine Tools and
Special Woodworking Machinery**

KEEN COMPETITION DEMANDS EFFICIENT MACHINE TOOLS

**Replace the sledge hammer
for drive fit work.**

**It cannot compete with the
Lucas Power Forcing Press**



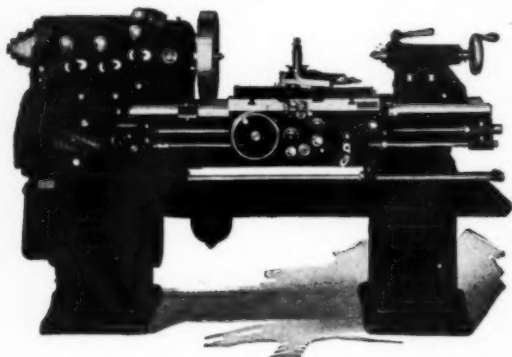
**The BELT
does the work
and SAVES the
workman's TIME
and ENERGY
for better use.**

We also make the
**LUCAS "PRECISION"
Horizontal Boring, Drilling
and Milling Machine**

**The Lucas Machine Tool Co.
521 East 99th Street, Cleveland, Ohio**

Modernize Your Lathe Equipment with

Monarch Ball Bearing Helical Geared Head Lathe



Monarch Helical Geared Lathes combine speed (productive capacity), smooth work (no gear tooth marks), noiseless operation and an ease of handling (time saving), that has never heretofore been obtained.

The Helical Gears have $3\frac{1}{2}$ teeth always in mesh. In operation they are noiseless, smooth and powerful.

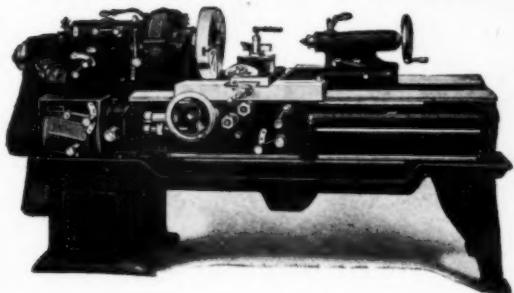
Greater production is insured, because of the higher speeds obtainable and of the many operating conveniences.

Glad to tell you how these modern lathes, from 14 to 30 in., increase production; how they are built; how the Monarch Dual-Control and other features save time. Write—

The Monarch Machine Tool Co.

Sidney, Ohio, U. S. A.

Cincinnati Lathes



have the motors mounted three ways—either on the head, attached to the rear of cabinet leg or inside of leg as shown in cut. As all of these drives are a self contained unit the lathe with the motor may be removed as a whole any time in the future.

At least 98-½% of the power from the motor is delivered to the work being machined. It is the power delivered to the tool that counts.

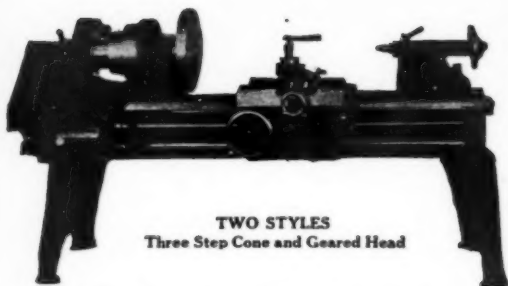
Specify Cincinnati Lathes and be sure of the quantity also quality of work you produce.

Sizes 16" to 32" either Cone Type or Geared Head belt or motor drive. It costs nothing to get our proposition for comparison.

Specialists Over 20 Years

The Cincinnati Lathe & Tool Co.

Oakley, Cincinnati, Ohio



TWO STYLES
Three Step Cone and Geared Head

16"x6' New Design **\$525.00**
Weight 1900 lbs.

18"x8' New Design **\$585.00**
Weight 2100 lbs.

3-step cone, double back gear, quick change gear, graduated compound rest, steady rest, lead screw and feed rod, tool post, centers, countershaft and wrenches, ready to run.

A lathe in the **INEXPENSIVE** class, for your shop equal to, in all respects, lathes of much higher price, having all their features:

Alignment and Precision
Speed in Production
Ease of Operation
Ability on all Work
Low cost of Upkeep
INEXPENSIVE COST to YOU

Made in 16" and 18" swing from 6' to 18' length of bed. Either 3-step cone belt drive or All Geared 9-Speed Drive Head for 2 H. P. Motor.

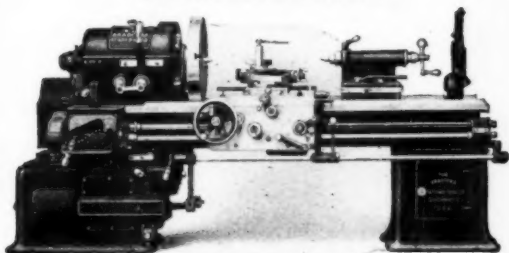
*Write us for full information and **PRICES***

The Rahn - Larmon Co.
2943 Spring Grove Ave., CINCINNATI, OHIO

Cut Your Costs

By Using

Bradford Patented Original Low Drive All Geared Lathes



Greater production—Low upkeep—Continuous duty—no tie up for repairs—more than 1200 now in use and no repairs. Guaranteed to finish turn work as smooth as cone type Lathes. Sizes 14" to 48" inclusive. Also Cone Type 14" to 48" inclusive.



Bradford Unit Type Drilling and Tapping Head

A self contained motor driven unit designed for one or more heads to be built into one unit at any angle from horizontal to vertical position.

The Bradford Machine Tool Co.

Precision Lathe Builders Since 1840

Cincinnati, Ohio

AGENTS WANTED

Locates Gear Trouble Definitely



Lees-Bradner Gear Tester

In order to correct gear troubles you must know exactly what is wrong with the gears—it is not enough to know that they roll roughly or that they make an objectionable noise.

The characteristic feature of the Lees-Bradner Gear Tester as distinguished from other devices is that it tells exactly what is wrong with a gear, thus distinguishing immediately between an error in tooth form and an error in indexing.

As it measures errors so exactly, you can set a definite limit on gear errors as easily as on the diameter of a shaft. It will soon save its cost for any maker or user of spur gears.

Price: \$375. f. o. b. Cleveland
Tooling Extra

The Lees-Bradner Co.
Cleveland, Ohio

A Device that Gives Chaser Insurance



Namco Chaser Grinding Fixture

New Chasers, like new razor blades, are efficient as long as they are "factory sharp"—*but then what?*

The Chasers of your Opening Dies and Collapsing Taps—whether of our make or of any other standard variety—can be kept "factory sharp" *always* by the use of the new Namco Chaser Grinding Fixture.

This simple tool makes any grinder with a table a first class Chaser Grinder and makes any operator a Chaser grinding expert. It insures maximum production from every set of Chasers and maximum life to them.

Price—including five Adaptors—only \$40.

The National Acme Company

(Tap and Die Division)

Cleveland, Ohio

NEW YORK

DETROIT

CHICAGO

Simplicity and Efficiency

are usually boon companions. The CLEVELAND OPEN SIDE PLANER has fewer parts than any other Open Side Planer made—and with these fewer parts performs to the complete satisfaction of the most exacting operator. The entire driving and operating mechanism can be reached from one position—saving time, steps and energy.

If you are not using the CLEVELAND it will pay you to investigate

The Cleveland Planer Company

Established 1900

3148 Superior Ave.,

Cleveland, Ohio

Over 1100 Installations

Send
for
Descriptive
Folder

26 in.
to
72 in.



The Open Side Planer with the Column Base Cast Integral with its Closed Top Bed.

n e w s

The CISCO UNIVERSAL OIL GROOVING ATTACHMENT, used extensively to increase production



This attachment, adaptable to any engine lathe from 14" to 24", increases production because it reduces the actual cutting time of the oil groove. It cuts several figure eight types of grooves, inside or outside the bearing. It is built in three sizes of 6", 9" and 12" maximum length of groove. The diameter is limited only to the swing of the lathe on which the attachment is used.

Large industrial plants, as well as the smaller shops throughout the country find this attachment very efficient. Its speedy operation compares favorably with regular oil grooving machines, at practically one-third the cost.

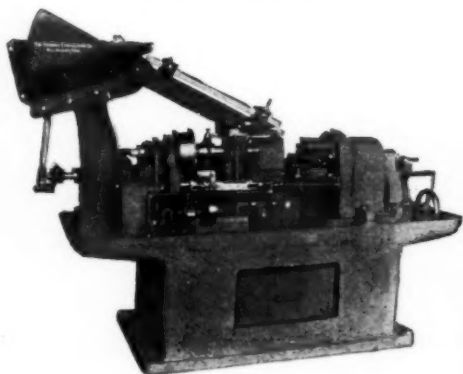
Send us samples of your work, we will oil groove them and show you how you can increase your production.

The Cisco Machine Tool Co.

1700 Elmore Street,

Cincinnati, Ohio

Combined Automatic Pointing and Threading Machines



For Bolts and Cap Screws
Capacity— $\frac{3}{16}$ "x1" to 1"x6"

Write for Full

THE ECONOMY ENGINEERING

Automatic Shaving Machines

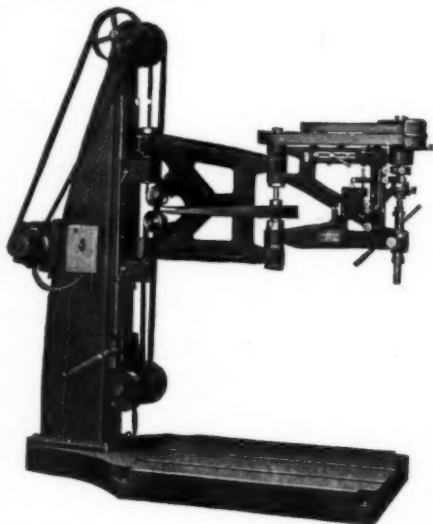


Shaves top and underneath
head of Cap Screws
Capacity $\frac{1}{4}" \times \frac{3}{4}"$ to $\frac{3}{4}" \times 5\frac{1}{2}"$

Information

COMPANY, - Willoughby, Ohio

THE HAMMOND AUTOMATIC
Tapping Machines are designed
to rapidly and efficiently perform
drilling, tapping, stud, nut and screw
driving operations.



Drilling radius.....4' 0"

Capacity $\frac{3}{4}$ " drills, $\frac{5}{8}$ " taps, $\frac{1}{2}$ " studs

Write for full information

The Hammond Manufacturing Co.

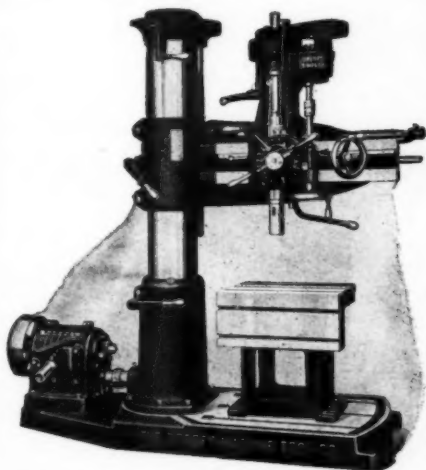
7808 Kinsman Road,

Cleveland, Ohio

2½ Ft. - \$1375.

3 Ft. - \$1457.

Dreses Simplex Radials



**We also build a complete line
of Multi Duty Ball Bearing
Radial Drills.**

The Dreses Machine Tool Co.
CINCINNATI, OHIO

Designed for High Speed Work

Ready for the Job



More
Holes
per
Hour!

C-O
14-inch
High-Speed
Sliding
Head
Sensitive
Drill

3,400
to
10,000
R. P. M.

Total height, 41".
Vertical adjustment of head, 7½".
Diameter of spindle, 5/8".
Travel of spindle, 3¼".
Maximum distance of bottom of chuck
to base table, 10¾".
Size of base table, 9½" x 12½".

Speed of spindle, 3,400-5,600-10,000.
Largest size of drill, 5/16".
Distance from column to center of sp. 7¼".
Size of sp. pulley, 1½"-2¼"-3"x1¼" face.
Bench space, 15"x20".
Net weight, 180 pounds.
Crated weight, 220 pounds.

Complete Information gladly furnished

Canedy-Otto Manufacturing Company

Main Offices and Factory—Chicago Heights, Illinois

New York Branch
407 Broome St.

Complete stock
carried at branches

San Francisco Branch
955 Folsom St.

The Improved Canedy-Otto No. 29

Ready for the Job



3 Spindle Speeds
720-1430-3000 R. P. M.

Completely
Motorized—
Also Furnished
Belt Driven

The Improved Canedy-Otto Sensitive Bench Drill comes complete with toggle switch, cord, socket, $1\frac{1}{2}$ " endless leather belt, and chuck. The motor is adjusted on a sliding base that maintains the proper tension on the belt at all times, and cuts lost motion and vibration to the minimum. Now equipped with a 3-step cone pulley which gives three spindle speeds of 720, 1430 and 3000 R. P. M. Complete information, with close price, upon request.

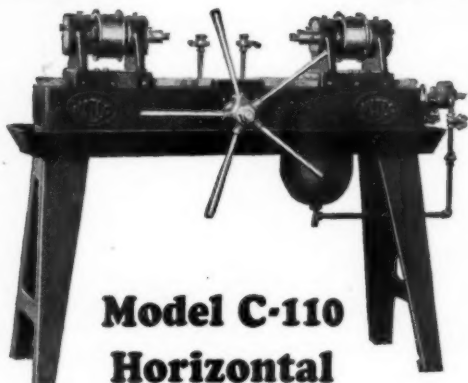
Canedy-Otto Manufacturing Company

Main Offices and Factory—Chicago Heights, Illinois

New York Branch
407 Broome St.

Complete stock
carried at branches

San Francisco Branch
955 Folsom St.



Model C-110 Horizontal Duplex

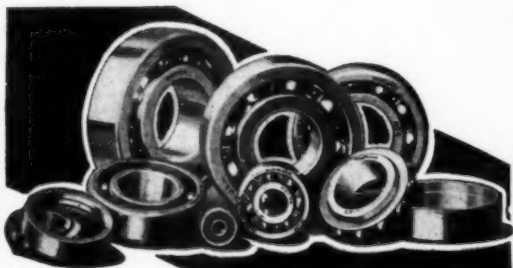
This is a hand feed horizontal drill particularly adapted to light work, requiring the drilling of two holes in line with each other from opposite sides of the piece. This machine is very simple in design but rigid in construction and the price is reasonable.

We are Manufacturers of

**Standard Adj. Multiple.
Fixed Center Multiple
Single Purpose Auto.
Hi-Duty Single Spindle
Horizontal Duplex**

**Drill Heads
Universal Joints
Quick Change Holders
Rotary Tables
Fixtures
Drillers-Tappers**

The National Automatic Tool Co.
Richmond, Indiana



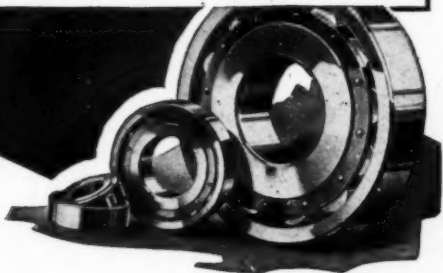
NORMA-HOFFMANN

PRECISION Ball and Roller Bearings,
built to meet the exacting require-
ments of those with whom depend-
able bearing performance is the one
conclusive measure of bearing value.

Catalogs 904, 905, and 917

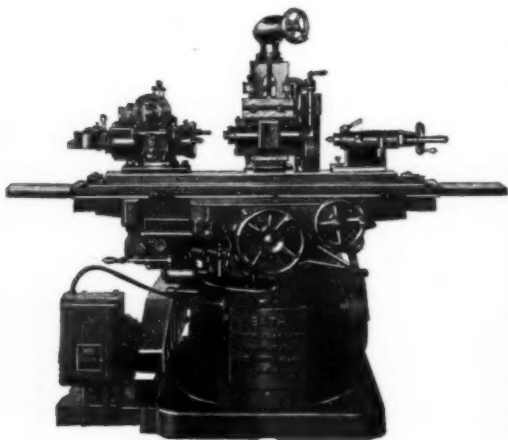
Norma-Hoffmann Bearings Corp'n.
Stamford, Conn., U. S. A.

PRECISION BEARINGS



BATH Universal Grinders

SELF CONTAINED



10"x25"

12"x36"

also

**Plain Cylindrical, Valve Seat
and Tappet Grinders**

Fitchburg Grinding Machine Corp.

Fitchburg, Mass., U. S. A.



**TWO Machines
for the Price of ONE!**

The RHODES Shaper and Slotter

A few turns of a wrench converts the RHODES into either an efficient shaper, or fast, accurate slotter. It will do keyseating, shaping, slotting, die making and intricate work of many kinds with *only one set-up* of the work. Within its range it will exceed the capacities of larger and more expensive single operation machines. Maintenance and operation costs are exceedingly low. It will pay you to investigate the RHODES.



**"The
Handiest
Tool in the
Shop"**

—
**7 in.
Shaper
Stroke**

—
**3½ in.
Slotter
Stroke**

*Ask your dealer or write for
CATALOG H22*

The Rhodes Mfg. Company
944 Park Road, Hartford, Conn.

SHAPERS—RHODES—SLOTTERS

FOOTBURT



A Single Spindle Footburt Sipp Sensitive Drill

**Made in three
sizes of single
and multiple
spindle models**

More holes with this machine

Why? Because you can change speeds in two seconds or belts in ten seconds—because the automatic idlers keep the belt pulling to capacity at all times—because the full ball bearing equipment and accurate machining gives a smooth, fast cut.

Write for No. 650 Folders

The Foote-Burt Company, Cleveland, O.

FOOTBURT

JUST A
WORD
ABOUT
DRILLING
MACHINES

Avey

THE
AVEY
DRILLING
MACHINE
CO.
CINCINNATI



Threading at 3000 R. P. M.

These rods are being threaded with a No. 8-32 thread 5-16" long, at an average production of 1400 pieces per hour on our Standard High Speed Tapping Machine.



*How about your
threaded work?*

Leland-Gifford Company, - Worcester, Mass., U.S.A.

BRANCHES

BOSTON CHICAGO CLEVELAND
DETROIT NEW YORK
PITTSBURGH ROCHESTER

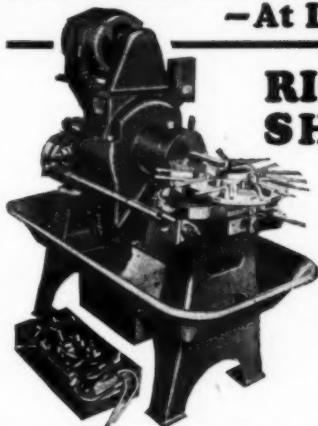
AGENTS

Hendrie & Bolthoff
F. E. Satterlee Company
Calcord-Wright Mch. & Supply Co.
Herberts Machinery & Supply Co.
F. F. Barber Machinery Co.

Denver
Minneapolis
St. Louis
Los Angeles
San Francisco
Toronto

LELAND - GIFFORD

**More Threads — Better Threads
— At Lowest Cost**



RICKERT- SHAFER

**Automatic
Single
Purpose
Threading
Machine**

Accuracy:— The R-S Machine is practically the only automatic threader which will maintain the accuracy demanded by automobile manufacturers.

Dependability:— Roller bearings are used for spindle sleeve; bronze for other vital bearings; individual motor drive; built-in pump for circulating coolant, with generous sized reservoir for holding same.

Flexibility:— Can be adapted to almost every job of threading, from the simplest to the most complicated. Combination tools can be supplied so that chamfering, reaming, facing, etc., can be done simultaneously with the threading and with but one chucking.

Reliability:— The R-S Machine is backed by a company whose personnel comprises men who have specialized on thread cutting only for over 35 years. Experience has taught them to produce threading equipment which gives *real service*.

Write for Descriptive Folder and Prices

RICKERT-SHAFER CO., Erie, Pa.

For Large Production Drilling In Small Parts of Varied Shapes



Wide adjustability of
feeds and speeds.

Work is clamped and
ejected automatically.

Both hands left free
to handle work.

Stecher Automatic Universal Bench Drill

The number of holes that can be drilled in a given time on the "Stecher Automatic" is limited only by the capacity of the drill.

The wide adjustability of speeds and feeds; the automatic clamping, releasing and ejection of work; the control of feed by a slight knee pressure, leaving both hands free to handle work—these are some of the features that make the "Stecher" such a *remarkable producer at bed-rock cost.*

The mere pulling of a lever changes the "Stecher" from an automatic production tool with power feed into a high speed drill press with sensitive hand feed. We can also furnish dial, rotary or magazine feeds to suit conditions.

*Write for folder, which gives the complete description
Also send us samples of your small parts to be drilled*

The Chas. Stecher Co., 2452 N. Greenview Ave.,
CHICAGO, ILLINOIS

GATERMAN

No. 10 Heavy Duty Pneumatic Oscillating Tapping Machine

Also recommended for Multiple Head Tapping

The machine is furnished throughout with antifriction bearings, there being twenty-two Timken Tapered Roller Bearings. This type of bearing insures an easy running machine and eliminates the necessity of bearing replacements.

Send samples or blue print. Our engineering department will be pleased to quote guaranteed production estimates and prices.



For lighter Tapping Equipment write for literature "LET AIR DO IT."

W. GATERMAN MFG. CO., Manitowoc, Wis., U.S.A.

**Taylor & Fenn Belt Driven
No. 12 Spring Press**



**UNIFORM BLOW
SPRING PRESSES**

**Are made in
three sizes,
with either
single or
double action**

Our No. 12 Belt Driven Spring Press, illustrated above, has a stroke of $3\frac{1}{4}$ inches. The foot treadle operates a safety clutch attached to the flywheel, which automatically stops the machine after each stroke regardless of whether the treadle is released or held down by the operator. The clutch can be adjusted for a continuous stroke if desired.

Descriptive circular gladly sent upon request

**The Taylor & Fenn Co.
Hartford, Conn., U. S. A.**

That Satisfied Smile

when you use
Shur-Grip

**FILE
HANDLES**



**They Screw On
and STAY ON**

Shur-Grip File Handles are used by factories where economy and efficiency are practiced. They are made in four sizes to accommodate any size file. They cut their own thread as they are screwed on, insuring a rigid grip—tight fit—ease in filing—and many other advantages.



Patented July 12, 1921—No. 1,384,154

Let Us Send You a Sample Shur-Grip

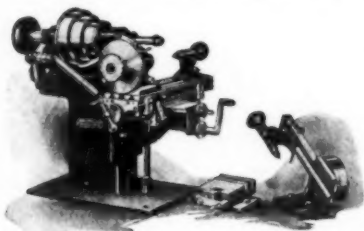
Hyro Manufacturing Co., Inc.
200 Varick St., **NEW YORK**

HARDINGE

Cataract Better Work

Bench Miller

Speed Accuracy Adaptability



Many years of practical experience and designing has brought forth a miller which fulfills the demands of our day—speed, accuracy and adaptability.

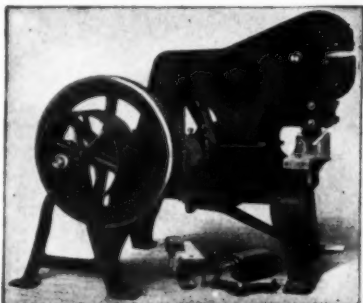
Our *Cataract Bench Miller* has a wide range of feeds. It has independent steel indexes graduated to read to thousandths of an inch, and is equally well adapted for the lighter tool-room, mixed or production work.

*Complete data, and interesting price
gladly sent on request*

Hardinge Brothers Inc.
4149 Ravenswood Ave.
Chicago, Ill.

BELOIT

Combined Power Punch and Shear



Built in seven sizes. Nos. 51, 52, 53, 54, 55, 55½ and 56
Direct connected motor or belt drive

THIS is the best all-around punch and shear in a combined machine of moderate cost. It is really three machines in one, for it combines the single end punch with the alligator shear for flat bars, and the round cutters for round bars—and all for the price of one single end machine!

HEAVY and substantial, amply back geared to require the minimum amount of power, strong, compact, easy to operate. Can be equipped with angle shearing attachment, angle notching and coping attachments if desired.

Write Today for Catalog and Prices

Hendley & Whittemore Co.

100 S. State St., BELOIT, WIS.

PUNCHES—SHEARS—BENDING ROLLS

Grand Rapids No. 1½ Universal Cutter and Tool Grinder



Newly designed to meet the demand for a high grade machine of medium capacity at a moderate price. It has the sterling qualities that are built into all Grand Rapids Grinders, including exceptional ease of handling—and it sharpens tools right.

Our "Universal Cutter and Tool Grinder" folder, which is yours for the asking, pictures this modern machine in the following grinding operations:—face mill, form cutter, angle cutter, surface, gear cutter, reamer, end mill, spiral and plain milling cutter, internal and cylindrical. It also illustrates Grand Rapids No. 2 Universal Cutter, Tool and Drill Grinder, and Nos. 3, 4 and 5 Universal Cutter and Tool Grinders.

Don't fail to write for folder; it's interesting

Gallmeyer & Livingston Co.

342 Straight Ave., S. W.,

Grand Rapids, Mich.



New Type Machine *For* **Rotary Filing** **Grinding and Polishing**

Type RF-M 4. $\frac{1}{4}$ H. P.



For
Die Makers
And
All Kinds of
Metal Finishing
Of
Various Shapes
and Sizes
A Machine—
For
Many Purposes

Attach to the
Lighting Circuit

Attachments



EQUIPMENT

- Ball Bearing Hand Piece.
- 8 Assorted Rotary Files.
- 9 Assorted Grinding Wheels.
- 1 Rubber Polishing Drum.

Machine Complete as Illustrated

N. A. STRAND & CO.
Manufacturers
5001 No. Lincoln Street
CHICAGO

Eliminate Your Hack Saw Blade Troubles

By Using the New Patented

Marvel High-Speed-Edge Hack Saw Blade

**For Use In All Power Machines
Genuine High Speed Steel Cutting Edge
Positively Unbreakable**



[Made in 12, 14, 17, 18,
21 and 24 inch lengths.]

[6, 8, 10, and 14 teeth
to the in., in all lengths.]

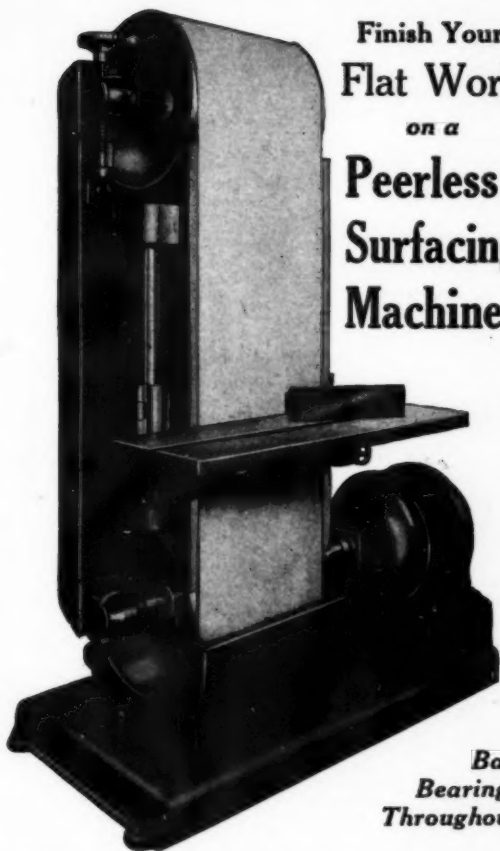
Points of Superiority

Guaranteed.
Original, patented.
Cuts twice as fast.
Positively unbreakable.
A straighter, truer cut.
Most economical, most efficient.
Genuine high speed steel cutting edge.
At least six times the amount of cutting.
Modern methods of manufacturing
assure uniformity.

**They outlast common blades many times over, never break
in the machine, and are cheaper in the end.**

Once tried, you will want no other. Complete details and prices on request.

Armstrong-Blum Mfg. Co.
341 N. Francisco Ave., CHICAGO



**Finish Your
Flat Work
on a
Peerless
Surfacing
Machine**

***Ball
Bearings
Throughout***

**PEERLESS SURFACING MACHINE CO., Inc.
TROY, N. Y.**

A Size for Every Need



WHATEVER your keyseating needs, you will find a CATLIN which will do the work quickly and efficiently. They will cut one or a thousand keyseats to within 1000ths of an inch accuracy, and do it rapidly.

ON SOME classes of work it is possible to keyseat piece after piece without clamping down the work, or stopping the machine. The No. 1 machine illustrated here has a stroke adjustable to 12" and cuts keyseats from $\frac{1}{16}$ " to $1\frac{1}{2}$ ". Other styles and sizes, both belt and motor driven, are made to fit your every requirement.

THE CATLIN KEYSEATER

THE CATLIN has less than half the number of parts of other keyseaters, consequently the parts can be made extra strong and sturdy without being clumsy. This also makes the machine simple to operate and ordinary workmen can easily run it at top speed. They have established shop records in many cases. Used by Automobile Plants, Government Shops, Navy Yards, Domestic and Foreign Factories and Machine Shops. Let us send you some of the shop records.

Write Us Today for Complete Information

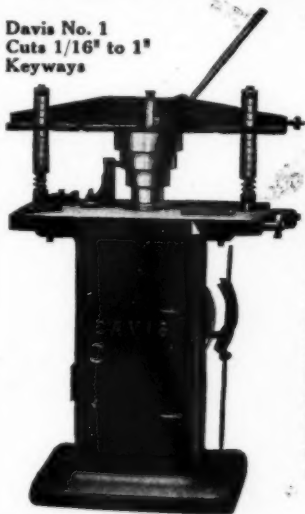
Chattanooga Machinery Company

2401 Bennett Ave.,

Chattanooga, Tenn.

Versatile—

Davis No. 1
Cuts $1/16"$ to $1"$
Keyways



The Davis Key- Seater

equipped to handle any keyseating job in the shop up to $1"$ wide. If you want a machine to turn out standard parts in quantity—accurately and speedily—the DAVIS will do it. If you want a machine to take care of the average jobs—the DAVIS will do that too. Made in two sizes.

DAVIS KEYSEATERS are wide range, accurate machines with ample power to handle every keyseating job from the smallest to the large gears, pulleys, etc. Capacity in steel keyseats $1/16"$ to $1"$ wide (also taper keyways) on hubs up to $12"$. Davis cutters for Davis Keyseaters in sizes from $1/16"$ to $1"$ in 16ths and some 32nds.

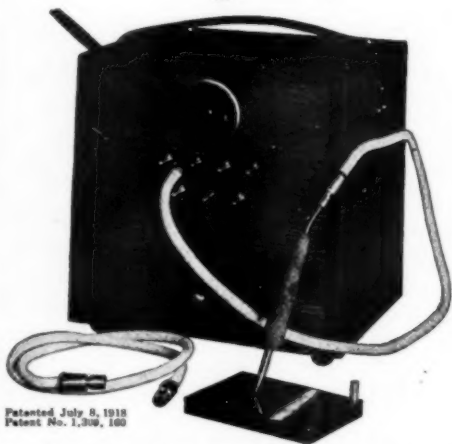
*Write for complete illustrated description,
including interesting table of cutting time*

Davis Keyseater Company

255½ Mill St., Rochester, N. Y., U. S. A.

Etchograph

Trade Mark



Patented July 8, 1918
Patent No. 1,300, 100

The *Original Electric Marker* for writing any size of letter, figure, or design on steel, iron or steelite, in one-fifth the time other methods require. The "Etchograph" is the only electric marker equipped with *six* stages of heat, thus regulating the current for heavy work or fine tools, and giving *six variations in size of markings*. Its use requires no experience, simply connect with light socket and write as with pencil.

When writing to us, mention power available

William Brewster Company
50 Church St., New York

Luma
LUMA ELECTRIC EQUIPMENT CO.
TOLEDO, OHIO

*Guaranteed
fool-proof
and durable.*

*Used on A. C.
light circuit.*



View of Etching Pencil
Marking and Demagnetizing
in same operation.

Luma Combination Electric Etching and Demagnetizing Instrument

Easy to use as a lead pencil

A time and labor saving tool that functions equally well permanently marking expensive high speed steel tools and demagnetizing large or small ones.

Always instantly ready without fuss or muss.

Operation symbols plainly and permanently marked on tools saves time and spoiled work and speeds production.

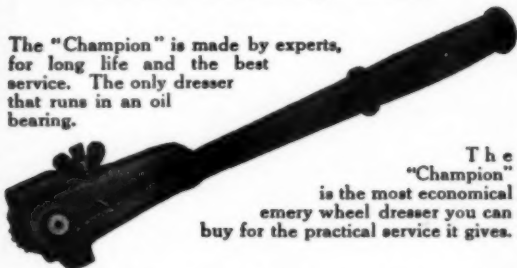
Luma Electric Equipment Co.

Dept. H. P. O. Box No. 132 Main Office,
TOLEDO, OHIO

"Champion" Emery Wheel Dresser

Outlasts a Dozen Cheaper Dressers

The "Champion" is made by experts, for long life and the best service. The only dresser that runs in an oil bearing.



The "Champion" is the most economical emery wheel dresser you can buy for the practical service it gives.

The *cutters* are made of a special steel, heat-treated and tempered by a special process.

The *sleeve*, furnished with each set of cutters, revolves on the spindle and the cutters in turn revolve on it, providing a more perfect bearing for the cutter wheels.

The patented *spindle bearing*, which is made of steel and thoroughly hardened, serves as a bearing for spindle and a guide for cutting wheels, and it cannot turn in the handle; makes wobbling impossible.

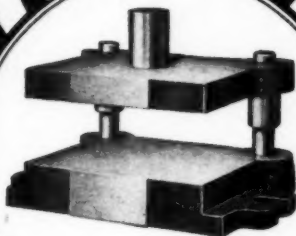
The patented *handle* is heavy and strong, designed for long service, efficiency and economy.

The patented *handle cap* eliminates the old-fashioned set screw and serves as an upper-clamp for spindle bearing. Further, there are no moving parts. On account of absence of wear, the life of handle and handle cap is indefinite.

Our Catalog also describes

Champion Tool Holders, Champion Expanding Mandrels, Machinists' Vises and Clamps, etc., and our large line of practical, hard-to-beat Shop Furniture. Copy upon request.

The Western Tool & Mfg. Co.,
SPRINGFIELD, OHIO



Danly Die Sets

**Completely Assembled,
Semi-steel; or steel shoe,
semi-steel punch holder.**

**Immediate delivery from stock at 20-50%
saving in cost; a set for every need. Over
4000 makers of stampings use them.**

Send for new edition of catalog

Danly Machine Specialties, Inc.

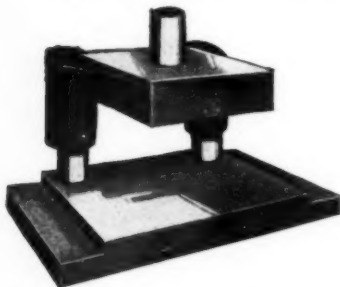
2116 So. 52nd Avenue, Chicago, Ill.

**Detroit
Mich.**

**Long Island City
N. Y.**

DANLY
STANDARD

U. S. Tool Offers A New Steel Base Sub-Press



No More
Costly than
Iron-Base
Sub-Presses

STEEL BASE—Larger in area than usual, giving greater strength when the blank hole is cut, greater resistance to strains and buckling. Thinner, lighter in weight, yet immensely stronger than cast-iron base presses.

ABSOLUTE INTERCHANGEABILITY—Any top fits any base, a positive assurance of precision.

HUSKY—Big pillars; extra long bushings hardened and ground.

EXTREMELY SIMPLE—Only three types meet every requirement for a sub-press.

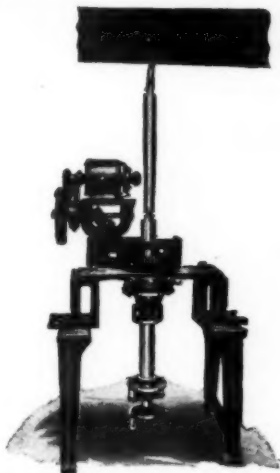
POSITIVE LUBRICATION—A simple and ingenious arrangement provides positive lubrication for pillars.

COST—No more than ordinary cast base sub-presses.

SEND FOR CATALOG

U. S. Tool Company, Inc.
AMPERE, N. J.

Something New



The Pedrick Boring Unit

This picture of drilling an overhead beam is only an indication of what the Boring Unit can do. It is intended more for other work than for drilling, but to get the whole story, write for a circular.

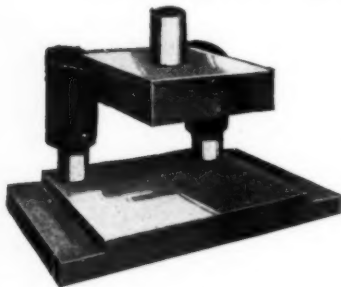
The Boring Unit removes the limitations from the portable boring bar, and reaches a field of work that otherwise requires the largest machine tools.

Pedrick Tool & Machine Co.

3644 N. Lawrence St., Philadelphia, Pa.

Builders of Portable Cylinder Boring Bars, Crank Pin Turners,
Portable Millers, Pipe Benders, etc.

U. S. Tool Offers A New Steel Base Sub-Press



**No More
Costly than
Iron-Base
Sub-Presses**

STEEL BASE—Larger in area than usual, giving greater strength when the blank hole is cut, greater resistance to strains and buckling. Thinner, lighter in weight, yet immensely stronger than cast-iron base presses.

ABSOLUTE INTERCHANGEABILITY—Any top fits any base, a positive assurance of precision.

HUSKY—Big pillars; extra long bushings hardened and ground.

EXTREMELY SIMPLE—Only three types meet every requirement for a sub-press.

POSITIVE LUBRICATION—A simple and ingenious arrangement provides positive lubrication for pillars.

COST—No more than ordinary cast base sub-presses.

SEND FOR CATALOG

U. S. Tool Company, Inc.
AMPERE, N. J.

Something New



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The Boring Unit removes the limitations from the portable boring bar, and reaches a field of work that otherwise requires the largest machine tools.

Pedrick Tool & Machine Co.

3644 N. Lawrence St., Philadelphia, Pa.

Builders of Portable Cylinder Boring Bars, Crank Pin Turners,
Portable Millers, Pipe Benders, etc.

No. 5 Jr. Punch



LIGHT and STRONG

Will punch $\frac{1}{4}$ in. hole through No. 16 gauge iron or its equivalent. Weight $2\frac{1}{2}$ lbs.

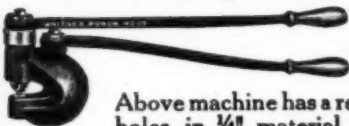
No. 8 Imperial Punch



Weight, 16 lbs.;
capacity $\frac{1}{4}$ "
through $\frac{1}{4}$ " iron.

Operating Handles will not become disengaged. Roller Bearing. No cams to wear out. Drop Forged. All wearing parts hardened.

Ball Bearing Punch No. 10



Capacity, $\frac{3}{8}$ " hole
through $\frac{1}{4}$ " iron.
Weight, $8\frac{1}{2}$ lbs.

Above machine has a record of 100,000 holes in $\frac{1}{4}$ " material. Will rivet as well as punch holes.

Write for Catalog and Price List on Entire Line

WHITNEY METAL TOOL CO.

95 Forbes Street,

Rockford, Illinois

KRW Hydraulic and Sensitive ARBOR PRESS

Now Sold Direct To User
At Greatly Reduced Prices

\$115⁰⁰ F. O. B.
Factory

COMPLETE With All
Attachments as shown

The latest improved combination KRW Hydraulic and sensitive Arbor Press incorporates many new improvements, not found in any other Arbor Press, at any price.

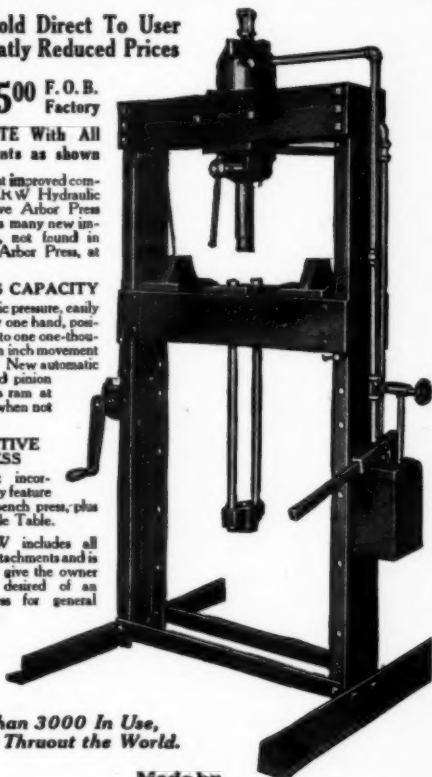
35 TONS CAPACITY

By hydraulic pressure, easily operated by one hand, positive control to one one-thousandth of an inch movement of the ram. New automatic air vent and pinion brake holds ram at any height when not in use.

SENSITIVE PRESS

Attachment incorporates every feature of a 3 ton bench press, plus — Adjustable Table.

The KRW includes all necessary attachments and is designed to give the owner everything desired of an Arbor Press for general garage use.



*More Than 3000 In Use,
Thruout the World.*

Made by

K. R. WILSON, 10-14 Lock St., BUFFALO, N.Y., U.S.A.

A Saving Hint for You

"Use Genesee Hollow Mills!"



THEY SAVE—Because the seven sizes cover the entire range from $\frac{1}{8}$ " to 2", which ordinarily requires hundreds of solid tools;—because one set of blades outlasts three to five solid tools, and can then be replaced at small cost.

THEY SAVE— Because they are ideal for finishing castings, forgings, etc., and more economical than non-adjustable mills for every purpose. Genesees cut up to 15" a minute in steel. They are stronger than solid tools, and as they cannot change in size, they are thoroughly dependable.

NOW MADE in six different styles, from the heavy roughing Style "B" to the accurate finishing Style "F." We also make Style "N" Mills for all Brown & Sharpe automatics, and special size and style to your order. You will find them all real cost reducers.

Equip your shop right—write us about your needs

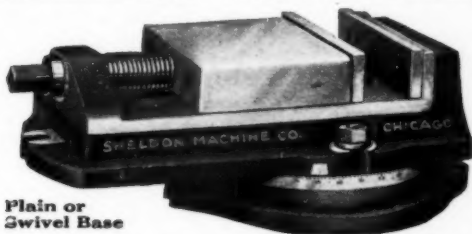
Genesee Manufacturing Co., Inc.

141 North Water Street, Rochester, N. Y.

Manufacturers of Genesee Rapid Production Tools.

Est. 1908

SHELDON MILLING MACHINE VISES



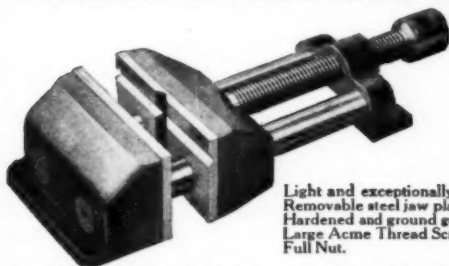
**Plain or
Swivel Base**

The swivel vise is the plain vise with the addition of a circular base, graduated in degrees. It can be removed from the circular base and used as a plain vise if desired.

Specifications and Prices

No.	Width Jaws	Depth Jaws	Jaws Open	Plain Vise		Swivel Vise	
				Weight	Price	Weight	Price
3	3 1/2"	1 3/8"	2 1/2"	15 lbs.	\$16.00	25 lbs.	\$20.00
4	4 1/2"	1 7/8"	3 1/2"	30 lbs.	\$20.00	45 lbs.	\$24.00
6	6 1/2"	2"	4 1/2"	70 lbs.	\$30.00	90 lbs.	\$40.00
8	8 1/2"	2 1/2"	6 1/2"	160 lbs.	\$45.00	225 lbs.	\$60.00

SHELDON DRILL PRESS VISE

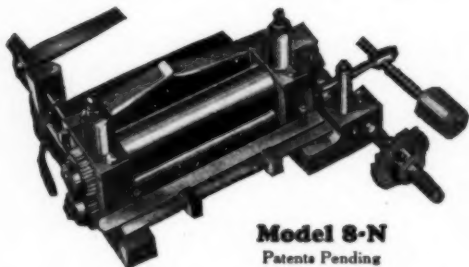


Light and exceptionally strong.
Removable steel jaw plates.
Hardened and ground guide bars.
Large Acme Thread Screw.
Full Nut.

No.	Width of Jaws	Depth of Jaws	Jaws Open	Weight	Price
D-4	4 1/2"	1 1/2"	4"	15 lbs.	\$12.00
D-6	6 1/2"	1 3/4"	6"	35 lbs.	\$18.00
D-9	9"	2 3/8"	9"	70 lbs.	\$24.00

SHELDON MACHINE CO. 3251 Cottage Grove Ave., CHICAGO, ILLINOIS

Automatic Reversible
ROLL FEED
For Any Punch Press



Model 8-N

Patents Pending

A universal, flexible feed, for automatically feeding Metal, Paper, Leather, Brake Lining, or any stock from coils—from wire to 8" widths and lengths of 0" to 36" at each stroke of the press at rated catalog speed or faster.

This feed mounts on either right or left side of the Bolster Plate, either as a Push or Pull feed. May also be mounted in tandem, one on the right and one on the left as a Push-Pull feed for paper or light stock.

The drive is by chain from a sprocket on the crank shaft, using any sprocket ratio desired.

PRICE \$195.00 F. O. B. Chicago

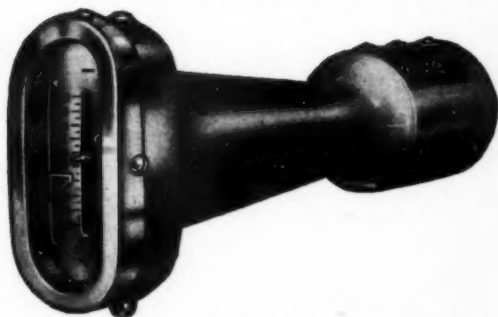
Wittek Manufacturing Co.

DEPT. 3

2532 So. Kedzie Ave.,

Chicago, Ill.

FOR
Accuracy and Speed
use the
CYLINDERMETER



**The New Super Production Indicator
Limit Plug Gauge**

*Tells The
Whole Hole Story at a Glance*

**Size-Taper-Roundness to $\frac{1}{4}$ -1000"
Simply Plug In and Read It**

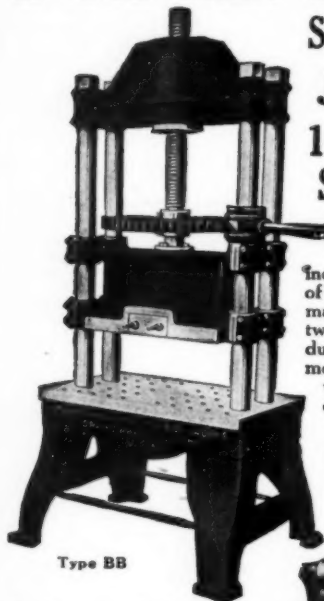
**Self Aligning
Very Simple
Very Light**

**Very Strong
Very Fast
Very Accurate**

ALL SIZES FROM 1' UP

Production Gauge Co.
2019 Fletcher St., - - - CHICAGO

If You Make Dies — You Should Have a **JARECKI** 1-Man 4-Post Screw Press



Type BB

They'll reduce your costs by increasing the efficiency of your toolmakers. One man can do as much as two on ordinary presses, due to the perfect alignment and the ease with which 80 tons pressure can be applied.

*Also made in 20, 25
and 40 ton sizes.
Send for Catalog.*

Surface Grinder

A substantially built machine that is powerful, rigid and accurate. Equipped with graduated dials and non-vibrating wheel.

Details and Prices on request

**JARECKI MACHINE
AND TOOL CO.**

Department A

GRAND RAPIDS,

MICHIGAN





A RAPID FIRE FILER

*Sharp Saws
At 5¢ Each*

That is all it
costs when
RESHARPENED
on this machine

**SAVES TIME
REDUCES WORK
ADDS EFFICIENCY**

That's Why

Amer. Brass have.....	19
Continental Fibre.....	28
Formica Insulation.....	10
and over 100 Newspapers use them	

The Model J

at a speed of
70 TEETH A MINUTE
sharpens all medium,
soft or spring tempered
CIRCULAR SAWS
up to 18" in diameter
Teeth from as small as 32 to
1" up to 1/2" spacing.

Write for Catalog

THE WARDWELL MFG. CO.

Makers of automatic machines for sharpening—Hack Saws, Hard Tempered Band Saws, Milling, Slitting and Screw Slotting Saws and all Woodworking Saws.

Manufacturers of the largest line of Saw Filers made in U. S. A.
108 Hamilton Ave., CLEVELAND, OHIO

For Railroads and Machine Shops



Wherever nuts are turned
time can be saved by using the

FAVORITE reversible ratchet **WRENCH**

Built Strong to Stand Rough Usage



A motion study test will show that a man with a "FAVORITE" Wrench will turn far more nuts in a given time than a man with an ordinary open wrench.

*Write for full
particulars*

Greene, Tweed & Co.

Sole Manufacturers
109 Duane St., New York





TIME and COST are vital factors in the finishing of small metal parts. Usually an ABBOTT Burnishing Barrel will finish more work in 90 minutes than a hand operator turns out in a full ten hour day.

*Send samples for
burnishing analysis.*

The Abbott Ball Co.

1043 New Britain Ave.,

Hartford, Conn.

GEARS

All Kinds—Small



The most accurate made and prices reasonable. We carry a complete line of gears in stock for immediate shipment. Can also quote on special gears of all kinds. Send us your inquiries.

Write for Catalogue No. 70

CHICAGO STOCK GEAR WORKS
105 South Jefferson Street, Chicago, Ill.



Die Making Machines

save an average of 50%

Dies, templets, experimental parts, gages and the like can be sawed, filed and lapped on the Oliver of Adrian Die Making Machine much easier, more accurately and in a fraction of the time ordinarily required for handwork.

We also manufacture a line of

Point Thinners.

Drillpointers.

Profilers.

Cutter Grinders



*Send
for
Bulletins*

Oliver Instrument Company, 1408 Maumee St., ADRIAN, MICH.

HAMILTON



LATHES

Are Strong and Accurate

Modern Heavy Duty Lathes 14-16-18-20 and 24"
Single and double back geared, cone driven.

Write us regarding your needs

The Hamilton Tool Co., Hamilton, Ohio

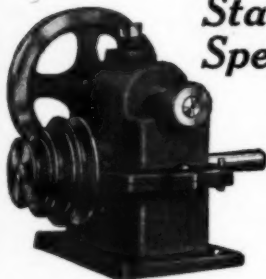
DO YOU KNOW
about this NEW C. & J. LATHE?



**15/16-inch
Geared Head
Motor Drive**

LET US SHOW how it meets MODERN needs
Carroll & Jamieson Machine Tool Co.
Batavia, Ohio

STANDARDIZATION PAYS



Type BU-2

Standardized Speed Reducers

For immediate delivery

Send for booklet "*Industrial Speed Reduction*" giving complete specifications and prices on complete series of Boston Speed Reducers.

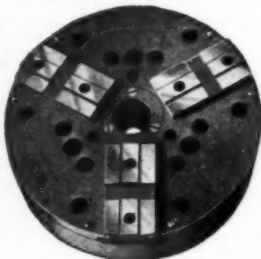
Boston Gear Works Sales Co.
Norfolk Downs, Mass.

Boston, New York, Philadelphia,
Cleveland, Chicago

Service Stations in Principal Cities

BOSTON GEARS

Accuracy—Speed—Efficiency "HOPKINS" 3-Jaw Chuck



"HOPKINS" original design, selected materials and the Dust-Proof feature guarantee continuous production at lowest costs.

Greater gripping power, lessened vibration and increased centering precision are guaranteed in each "HOPKINS" Chuck.

"HOPKINS" Two and Three Jaw Chucks are made in the following diameters: 8", 10", 12" and 14"—all carried in stock.

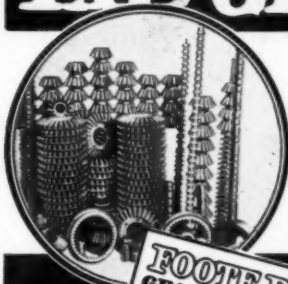
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TOMKINS-JOHNSON CO.

600-610 Mechanic St.,

Jackson, Mich.

IXL GEARS



**All Sizes
and Types
for Every
Requirement**

send for
660 Page Catalog,
"Gear Problems"

over
60,000
different patterns

FOOTE BROS.
GEAR & MACHINE CO.
229 N. Curtis St., Chicago

your "special"
Problem
may be a
Standard
one with
us



ALL TYPES:

**Spurs, Internals, Bevels,
Mitres, Helicals, Spirals,
Worms, Worm Gears,
Sprockets, Ratchets.**

ANY MATERIAL:

**Steel, Cast Iron,
Brass, Bronze,
Aluminum, Fibre,
Bakelite, Rawhide.**

Made in Small and Medium Sizes, all of One Quality—the very best. We also carry a full line of Stock Gears for immediate delivery. *Write us.*

MASSACHUSETTS GEAR & TOOL CO.

36 Nashua St., Woburn, Mass.

E-Z THREAD DIAL

Thread cutting on engine lathes made easy, and at lower cost. Made in four sizes.

Can be easily attached to all size lathes.

A reliable device that will aid the operator in the work of cutting threads.

With it threads can be cut close up to shoulders as easily as the ordinary thread.



Eliminates stopping or reversing the lathe.

The many repeat orders received prove it is satisfactory after trial.

Can be shipped within two days after receipt of order.

Sent on thirty days' trial. Send for latest folder today.

JAMES M. COLVEN, 20 Wolfe Street, Yonkers, N. Y.

Reliability and Adaptability



Are Assured if You Use

SMILLIE

Turret Lathe Drill Chucks

The American Injector Co. says: "The valuable features of these chucks are the ease with which the work can be cen-

tered; the rigid holding of tools and drills when locked in position; their reliability and ability to stand severe usage."

Dimensions and Prices:

No. 1 takes Drills	No. 55 to $\frac{3}{8}$ "	\$ 7.00
No. 2 takes Drills	No. 42 to $\frac{1}{2}$ "	8.50
No. 3 takes Drills	$\frac{1}{4}$ " to $\frac{3}{4}$ "	9.50
No. 4 takes Drills	$\frac{1}{2}$ " to 1"	17.00

Shipped for **FREE TRIAL** if so Desired

C. M. SMILLIE & CO.

520 E. Larned St.,

DETROIT, MICH.

SHAPERS

12", 14", 16"
Plain Crank,
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B. G. Crank,
either Cone
Driven or
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Belt Shifter
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32" Back Gear-
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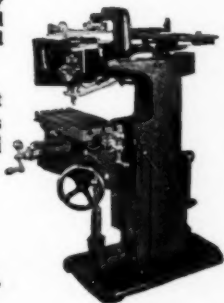


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Universal Die Sinking and Engraving Machines

designed to save time and money
on the production of light and
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general engraved work—

in brass, steel or cast iron. Built
by a firm having over thirty years
of experience, having equipped
many prominent work-shops.



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George Gorton Machine Co.
Racine, Wisconsin

Machine Steel Discs From Stock or Cut to Order!



Phone, wire or write, and your order will be

Shipped Promptly

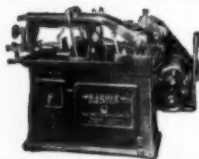
We can supply any size

Machine Steel Discs from 1" to 12" in diameter, one inch and wider and in any quantity from one to a thousand or more. This *new service* will save you time and money.

Writing us for quotations places you under no obligation

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Telephones: Monroe 6960-6961



Racine Shear Cut Production Saw—Positive screw feed, cutting time never varies. Blade life is trebled.

Outstanding Advantages

Positive Screw Feed—An exclusive feature of the Racine Shear Cut.

Continuous Lubrication of Saw Guide through an oiling pad, and—

Wick oilers on main bearings are also exclusive Shear Cut features.

Racine metal cutting machines have many outstanding advantages. For efficiency, long life and economy, specify Racine Machines for your metal cutting department. New catalog and free cutting chart on request. Write

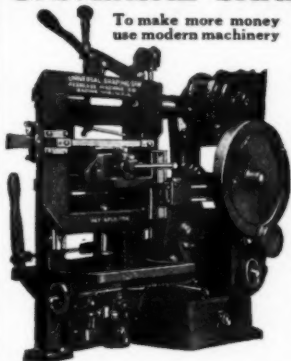
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1429 Junction Ave., Racine, Wis.

RACINE

HIGH-SPEED METAL CUTTING MACHINES

-PEERLESS- UNIVERSAL SHAPING SAW



To make more money
use modern machinery

**Different Principles
Greater Efficiency
Give The Most Of—
Speed
Accuracy
Blade Economy**

SIZES:

6"x6"--9"x9"--13"x13"

PEERLESS

HIGH SPEED HACK-SAWS

6"x6" 9"x9" 13"x16"

Sturdy--Efficient--Reliable

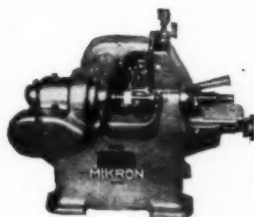
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**AUTOMATIC
SMALL PRECISION**

**Gear Hobbers
Gear Cutters
Pinion Hobbers
Thread Millers
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Triplex Machine Tool Corp.

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Atlas Arbor Presses

For All Forcing Operations

Illustration shows our No. 55 Power Drive Press, which is adaptable for fast production work and capable of supplying ten tons pressure.

*Write for our Bulletin—
showing 30 different sizes*

Atlas Press Co.

*Department B,
Kalamazoo, Michigan*

Fall River Screw Press



Here is a new screw press which is large enough and strong enough to take care of every job that comes into the average shop. It is built of high grade steel throughout, with special attention given to those parts subject to the hardest strain. 42 inches wide and table is 8 inches. Capable of exerting over 65 tons pressure.

Write for further information

Fall River Grinding & Machine Co.
JESSE ST., FALL RIVER, MASS.



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Dial Indicator

MODEL "50"

JEWEL BEARING MOVEMENT

The Federal "Fifty" Dial Indicator is graduated to read in half thousandths (.0005") the full range being .3" or ten complete revolutions of the hand. Equipped with bezel clamp, allowing dial to be securely locked in any position desired. Details may be altered to suit your requirements.

Write for complete details of this and other FEDERAL models

Federal Products Corporation
PROVIDENCE, R. I.

Western Branch: 7338 Woodward Ave., Detroit, Mich.

"SAUNDERS"

Pipe Threading and Cutting Machines

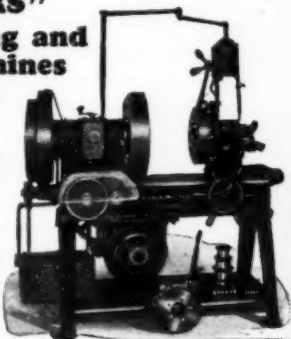
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**For Plumbing,
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No. 4-B range $\frac{1}{2}$ to 4" Incl.
 No. 5-D range 1 to 6" Incl.

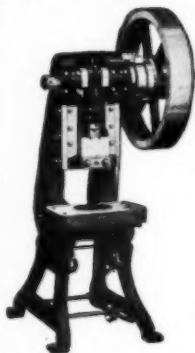
Full line to meet all requirements, $\frac{1}{4}$ to 18" Incl.

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D. Saunders' Sons, Inc.
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The Spirit Of the Times



is reflected in the speed and stamina of Rockford High Duty Punch Presses.

They are built to produce and maintain Hi-Production—and they do it.

Wide range of sizes and types.

Write today for new catalog

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Rockford, Ill.



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**Insure Continuous and
Profitable Production**

Because they are made of the right quality of tool steel.

Because they are hardened with every care.

Because all our experience of 35 years is centered in making them accurate, rugged and dependable.

*Large stock of regular sizes
Special sizes quickly made*

T. H. Lewthwaite Machine Co.
311 East 47th St., (Est. 1890) New York City

TRY us on your Difficult Riveting Job

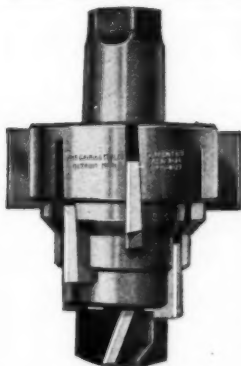


We have solved the riveting problem for many manufacturers, who thought hand riveting was their only way out, until they investigated the "GRANT," which does their work better and at much less cost.

"GRANT" Noiseless Rivet Spinning Machines and Rotary Vibrating Riveters cover all classes of work, including awkward pieces and riveting in out-of-the-way places.

*Send samples of your work
for riveting and cost estimate*

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GAIRING MULTIPLE - OPERATION CUTTERS

**SOLID
AND**

INSERTED BLADE

Our business is the planning and production of end cutting tools upon which we have concentrated our thoughts and efforts for many years.

Our Technical dept. devotes its time exclusively to planning and designing tools to suit your requirements.

Send us your Blue Prints or parts to be machined, we will design and suggest tools to produce holes most economically.

No obligation, merely a willingness to be helpful. Tool Catalog and Engineering Reference mailed on request.

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LINLEY Equipment for Rotary Rivet Spinning Machines



Roll Holders
Roll Holder Screws
Riveting Rolls
Burnishing Tools

Burnishing Tool Holders
Anvils
Hammers or Pliers
Used Rolls Retinished

In producing and marketing LINLEY EQUIPMENT for RIVET SPINNING MACHINES, the main idea we had was to produce equipment of superior quality.

Our experience in this line enables us to offer you tools that are made of the correct materials, properly heat treated and machined to close limits where accuracy is necessary. They will give you longer service and at a saving in every case.



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Bridgeport, Conn.

ARMSTRONG COMPLETE LINE OF Ratchet Drills



Packer, for rough service; *Standard*, for general use; *Weston*, extra heavy; *Universal* and *Short Ratchet*.



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for
our
Ratchet
Drill
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The Armstrong Universal

The "Universal," shown above, may be used in awkward corners and confined spaces where other Ratchets are useless. Often pays for itself on a single job. Simplest, strongest, fastest.

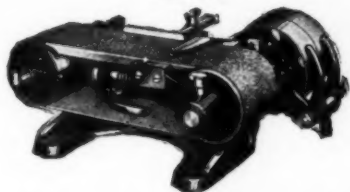


Armstrong Bros. Tool Co

"The Tool Holder People"

308 N. Francisco Ave., Chicago, U. S. A.

Abolish Expensive Hand Finishing
with a



Simplex-A Abrasive Band Grinder

This Grinder accelerates production and cuts costs. Hand emerying or filing operations are antiquated in comparison. The use of this new modern machine assures straight grain finishes with sharp edges. *Details of this and other styles and sizes on request.*

WALLS SALES CORP., 96 Warren Street
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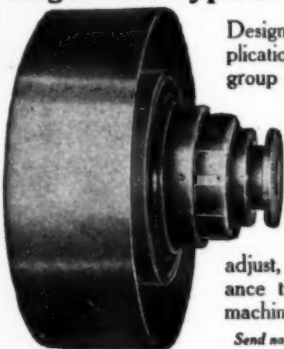
**All sizes
and types**

**Belt and Electric
Bench and Floor
Ball and Roller
Bearing**

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Catalog No. H*

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Edgemont Type E Disc Clutch



Designed for machine applications, high speeds and group drives, but is also adaptable for any other drives where an efficient, powerful clutch is needed. Extremely easy to operate and adjust, with neat appearance to match the best machine tools.

Send now for "Type E" bulletin

THE EDMONT MACHINE CO., Dayton, Ohio

For Sure Balance--

an absolutely level and solid "Way" is necessary

Bowsher "Balancing Ways"



are brought to an absolute *level* in ten seconds. No revolving parts.

The edges or "knives" upon which the work is tested are ground *true*, and are mounted upon the planed "ways" of a heavy bed or frame.

Standards adjustable to suit length of arbor.

Three sizes for floor—one for bench use

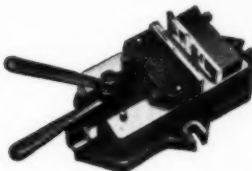
Send for Catalog "F"

The N. P. Bowsher Co., South Bend, Ind.

The Quick Acting
Powerful Gripping

"Hartford"

An Unusual Milling Vise



Jaw width 5"
Jaw depth 1 1/4"
Maximum opening 3 1/2"
Weight 40 lbs.

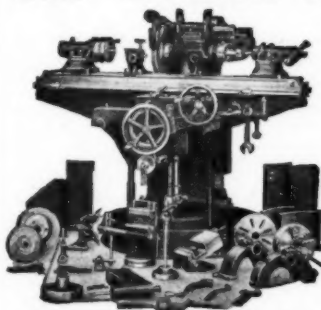
Also made in the swivel-jaw type with hard or soft jaws, maximum opening 2 1/4".

This unusual milling vise has the power and durability to handle any job within its dimensions and to stand up under the hardest usage. A special design includes a cam handle that gives instantaneous opening and return, a top eccentric lever handle that furnishes unequalled binding power. Steel parts drop forged, hardened and ground. *Write for the illustrated bulletin.*

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We also Build Machinery on a Contract Basis and Design and Develop Special Automatic Machinery—Gears Cut to Order.

SIX Grinders In ONE



Does every grinding operation required in the machine shop.

**Thompson
12'x36'
Universal
Grinder**

Lowest cost work for plain, surface, die, cutter, edge and internal grinding.

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Bulletin today*

The Thompson Grinder Co.
1534 West Main St. Springfield, Ohio

Keyseats Right On the Spot

No Dismantling—No Fuss



**The BURR
Portable
Keyseater**

Cuts keyways
up to 12" long,
in shafts up to 5"
diam., anywhere,
in any position.

Have one on
hand for your
next emergency—the cost is often saved on a single job. The
seven sizes are *quick and accurate*. Hand or power driven.
Over 10,000 in use. *Order yours today and save money!*

JOHN T. BURR & SON

422 Kent Ave., Brooklyn, N. Y.

For All Sizes OF KEYSEATS

This keyseater is made in 20
different diameters and used
in the drill press. We make
many specials.

Ask for Catalog O

National Machine Tool Co.

2268 Spring Grove Ave.,

Cincinnati, O.





**"Scully-Jones"
Adjustable
Spacing Collar**

**For Milling Machine
Arbors**

**Hardened Ground
SAVE SET-UP TIME**

**"A GOOD COMBINATION"
HARDENED & GROUND SOLID SPACING COLLARS**

**Ends are
ground parallel,
lengths
are accurate**



**Made of
Alloy Steel
Regularly
furnished with
new standard
keyways.**

All thicknesses and standard arbors carried in stock for immediate delivery.

SCULLY-JONES & CO., Tool Division
3101 S. Rockwell St., Chicago, Ill.

Steel Spacing Washers—

**Made of a good grade of Cold Rolled
Strip Steel, also known as Shim Steel**



**Stock sizes for arbors of
following diameters: $\frac{3}{8}$,
 $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$, $\frac{7}{8}$, 1, $1\frac{1}{8}$, $1\frac{1}{4}$,
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 $2\frac{1}{2}$, 3, $3\frac{1}{2}$ and 4 in.
and larger.**

**Stock thicknesses: .002,
.003, .004, .005, .006,
.007, .008, .010, .012,
.015, .020, .025, .032,
.047, .063, .093 and
.125 inch.**

**Other thicknesses up to
3.000" made to order, with
keyways if so ordered.**

Ask us to send samples; you'll like them

Detroit Stamping Company
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Sigourney Sensitive Drills

Plain or Ball Bearing
Belt or Motor Drive

WE MANUFACTURE sensitive drills exclusively. They are built for *service*, and in quality are unsurpassed.

SIGOURNEY DRILLS are made with one to four spindles. The illustration shows our one-spindle ball bearing drill. It has vertical adjusting head, adjustable table, three speeds, runs true and is very sensitive. *All parts are interchangeable.* Shipped belted ready for use.

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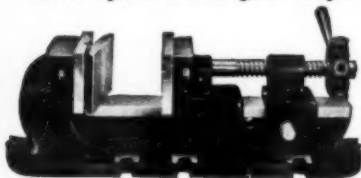
Sigourney Tool Co.

Hartford, Conn., U. S. A.



Gem Drill Press Vise

Holds tapered and irregular shaped pieces firmly



Made in
three
sizes
up to
10½ in.

ITS STRENGTH, capacity, adaptability and quickness of setting make it *the most efficient vise on the market.* Swivel jaw adjusts automatically to odd shaped pieces. Adapted to an unusual variety of drilling and milling operations. A big time saver. Worth more than it costs.

Write for folder, illustrating some of its many uses.

J. E. Martin Tool & Die Works, 528 W. State St.
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The **HANDNIB** *Entirely New!*

Set it up in any vise, use it to cut sheet metal in any design *easily, accurately, quickly* by hand. Eliminates expensive machinery and laborious uncertain drilling. *Cuts template and gauge making costs a full tenth.* Low priced. No other machine like it—you must see it to believe it. We can supply any shape blade for your particular work.



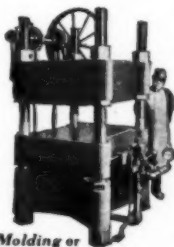
Write now for testimonials and full details.

National Machine Tool Co.
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Special
Blades for
Special
Jobs



Lourie Hydraulic Machinery



*Molding or
Forming Press*

Hydraulic Presses

For

Every Purpose

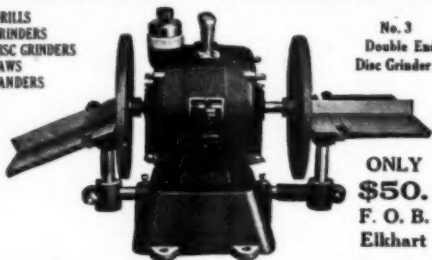
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Lourie Mfg. Co.

565 Washington Blvd., Chicago, Ill.

Winterhoff Motor Driven Portable Tools

DRILLS
GRINDERS
DISC GRINDERS
SAWS
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No. 3
Double End
Disc Grinder

ONLY
\$50.
F. O. B.
Elkhart

The No. 3 has been designed to meet a demand for a medium priced machine that would furnish a true flat grinding surface, and would stand up under any usage. Its sturdiness, accuracy and handiness are unsurpassed. *Write today concerning Winterhoff Portable Tools.*

Winterhoff Tool & Machine Co., 109 South Elkhart Ave.,
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Sensitiveness and Precision

are the leading characteristics of

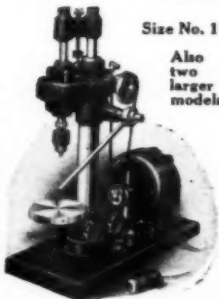
The A. M. Sensitive Drilling Machine

A self-contained, mobile bench unit of vertical type that can be used for a variety of operations coming within its capacity. Its prime purpose is drilling from .010" to sizes that can be handled on the ordinary drill press. Also adaptable for reaming, chamfering, counter-boring, burnishing, damaskeening and some classes of end milling. Economies effected by its use seldom fall under 25% and often production is doubled. Three sizes, unconditionally and permanently guaranteed against any defect.

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Size No. 1

Also
two
larger
models



ADOLPH MUEHLMATT
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In Spite of Precautions Taps Break in the Hole

That's bad enough—but the real expense comes in stripping the threads when you remove the broken tap.

The Walton Tap Extractor

offers an effective, instantaneous way of overcoming this loss. Its steel fingers inserted in the broken tap remove it intact. An apprentice can operate it!

Made in three and four-flute styles

Often pays for itself in the 60 day trial allowed

The Walton Company
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Combined Truck and Hoist—



"CanTon Portable"

You can easily figure the saving it effects—one man with a CanTon does the work which ordinarily takes 6 to 10 men.

CanTon lifts any shape or size piece, weighing up to 6000 pounds, *moves* it anywhere about the shop, *and places* it where you want.

Safety friction brake holds the load at any point, insuring safety to the operator and work.

Made in several sizes

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New York Office: 101 West 31st Street

BURKE

No. 222 Drill Press



Burke Drill Presses have been in use for the past thirty years and are sold all over the world.

The new No. 222 Drill with vertical motor carries the same high grade workmanship that characterizes all Burke Tools.

When the problem of drilling presents itself, drop us a card, and we will both profit by same.

The Burke Machine Tool Co.
297 East 16th Street,
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Vanderbeek Universal Joints



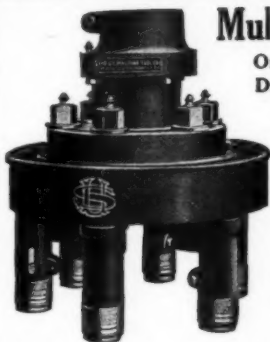
—represent the practical refinements of 25 years experience in manufacturing Universal Joints. All parts are generous sized, fully protected against dirt, and are practically self-oiling. Exceptionally strong, they transmit full power up to 70°.

Vanderbeek Joints are in daily use on thousands of machines.

Write today for our Descriptive Catalog.

American Tool Works, Inc.
Hartford, Conn., U. S. A.





Multiple Drilling

On Your 1-Spindle
Drilling Machine

The U. S. Multiple Drill Head converts any single spindle drill into a multiple drill press with two to six adjustable spindles that will drill any pattern while utilizing the same speeds and feeds required for drilling one hole at a time.

Send your problems to our drill-head experts. If necessary, they can design special heads with fixed or adjustable spindles to fit your needs.

The United States Drill Head Co., 1952 W. Sixth St.,
CINCINNATI, O.

Michigan Agents—National Sales Engineering Corp., Detroit, Mich.

The U. S. is Accurate Simple, Rugged

This completely motorized, 14" sensitive floor drill can be relied on to give accurate, sturdy service drilling holes $\frac{1}{2}$ " and smaller.

Price with motor,
switch and belts - **\$115**

Or with Counter-
shaft for Belt Drive **\$70**

Made of quality materials according to the best mechanical practice. The spindle is provided with a ball thrust bearing, and is counterbalanced by weight inside column. There is a vertical adjustment to head, and tables are adjustable to any type of work.

Let us send you full mechanical details

The U. S. Machine Tool Co.

1952 W. 6th St., Cincinnati, Ohio





Increase Production, Decrease Costs!



**3
Sizes**

Accuracy — precision — dependability — these are the factors that determine the selection of spot welders in the automotive industry. But they are not the only reasons why so many automotive concerns inevitably come to Taylor-Winfield — increased production and reduced operating costs are other decided advantages of Taylor-Winfield Spot Welders.

The latest type illustrated, Type N, is already the leading continuous service spot-welding machine of the industry, with water-cooled transformer, automatic switch, adjustable horns, 8-step regulator, etc., built for steady twenty-four-hour duty!

Write for details on complete Taylor-Winfield line

**THE TAYLOR-WINFIELD CORP.
WARREN, OHIO**

TAYLOR-WINFIELD
**Spot, Butt,
Seam or Portable WELDERS**

Lewis Seam-Welding Head

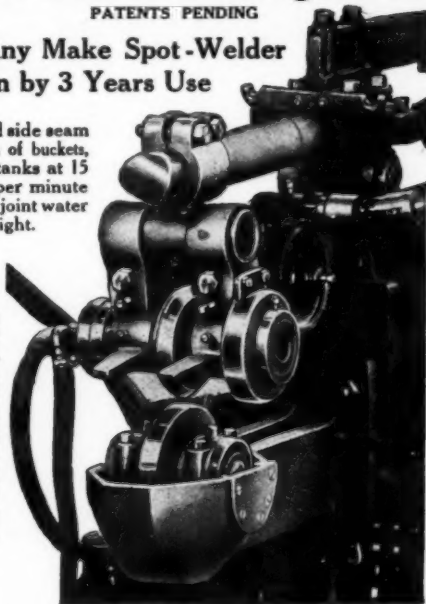
PATENTS PENDING

**Fits Any Make Spot-Welder
Proven by 3 Years Use**

Will weld side seam
or bottoms of buckets,
pails or tanks at 15
to 25 ft. per minute
and make joint water
and gas tight.

One user has made over 1½ million
3 inch lap joints and then nickel
plated the piece.

You can't find the joint.



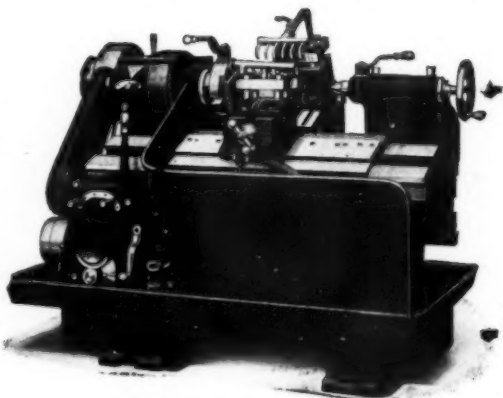
No structural change is necessary to your spot welder—simply clamp the Lewis Welding Head to the upper horn. Remove lower horn and bolt on the proper electrode for either transverse or longitudinal welding. Please note the electrode "drive" is a separate unit and NOT attached to spot welder.

Let us send you our bulletin No. 128 which gives interesting information on seam welding in general and *This Proven Seam Welder in Particular.*

Welding Appliance Co.

2111 West Lake St., Chicago, Ill., U.S.A.

LeBlond Mult



LeBlond No. 11 Multi-Cut Lathe

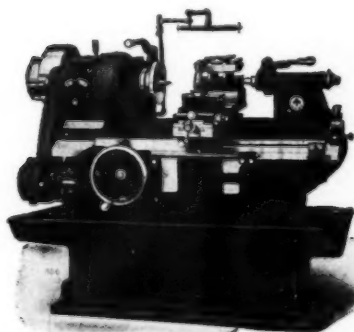
The set up on the Multi-Cut is extremely simple. There are no cams to manipulate.

Send us your blue prints for production estimate and tooling recommendations.

**The R. K. LeBlond Machine Tool
CINCINNATI, OHIO**

Multi-Cut Lathes

The Multi-Cut is Essentially a Lathe, but with greater productive capacity. One trained operator on a Multi-Cut will replace 4 to 6 skilled mechanics, and a like number of lathes.



LeBlond No. 9 Multi-Cut Lathe

Extremely

as

estimate

Tool Co.



MACHINE TOOL AND GENERAL
PURPOSE PUMP



VOLUME PUMPS



MOTOR DRIVEN UNITS
 $\frac{1}{2}$ to 5 H. P. 5 to 75 G. P. M.

FULFLO delivers coolant in volumes which promote efficiency in cutting tools.

The full, copious flow from the Fulflo is needed to make the best tool, with the best coolant, most effective,

FULFLO does not clog, therefore it always

works. It's the trouble proof pump.

No machines stopped to unclog pump. All the chips you can get into it pass through without harm.

FULFLO has longest life because its only pumping part does not wear.

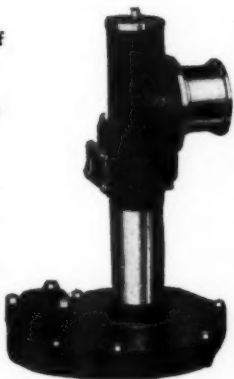
MANUFACTURED BY

FULFLO SPECIALTIES CO., BLANCHESTER, OHIO

THE "GUSHER" The last word in Machine Tool Lubricant Pumps

Range of
sizes to
deliver
12 to 75
gallons
per
minute.

—
Belt or
Motor
Drive.



This
model
delivers
53 gals.
per
minute,
at a
4-foot
head
at
400 R. P. M.

New Model B-L "Gusher" Reversible Belt Driven Pump

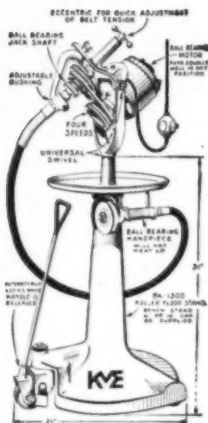
In all things, but proverbially in mechanism, the supreme test of excellence is simplicity.

The "Gushers" are the simplest pumps made. They are free from all troublesome complications—no gears—no foot or relief valves—no packing nuts—no priming necessary—and grit, dirt and small chips pass through without injury to the mechanism. Easily installed, wonderfully efficient, and stand wear and tear.

Write today for complete Catalog of the "Gusher Line"

The Ruthman Machinery Co.

528-534 E. Front St., Cincinnati, Ohio



Keller "BK" Flexible Shaft Grinder

"The Machine of a Hundred Uses"

$\frac{1}{4}$ — $\frac{1}{3}$ — $\frac{1}{2}$ — H. P.
SPEEDS UP TO 10,500

**Non-Heating Shafts
Ball Bearing Handpieces**

**FILING— GRINDING—
POLISHING—DRILLING—
ETC.**

Tell us your problems

**Keller Mech. Engineering Corp.,
58A Washington St., Brooklyn, N. Y.**

At One Set-Up



All this intricate work was done with a No. 4 PORTER-CABLE Milling Machine Attachment. Reduce set-ups with these Attachments and lower cost per job is your result.

Write for new interesting Booklet.

PORTER-CABLE MACHINE CO., Salina Street,
SYRACUSE, N. Y.

For Complete Safety

No danger of cut hands when you use a Combination Drill Table and Vise—even on jobs with sharp corners, as on this angle. Also makes possible more accurate work.

A Safety Tool that saves its cost in labor every six months.



*Write for free
trial offer*

MODERN MACHINE TOOL CO.,

Jackson, Mich.

Bending to Perfection

with "Buffalo"

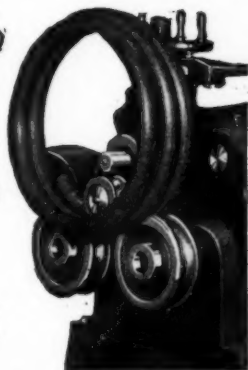
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*In Canada: Canadian Blower &
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Exceedingly Sensitive

Balancing Ways

Easy to Manipulate



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Equipped with glass-hard spindles, chilled steel discs, and especially sensitive ball bearings, to give accurate, long time service.

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Greatest distance bet. standards..	20"	30"	30"	66"	88"	20'
Capacity in lbs.	1000	2000	2000	5000	10000	24000
Approx. shipping weight.....	45	90	150	350	650	
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Straightening
Press—



Made in
3 Sizes

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In Shop
Factory
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Garage

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633 West Southern Avenue, SPRINGFIELD, OHIO
We also manufacture Engine Lathes and Shapers

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SAFETY TAPPING ATTACHMENT with the "Procunier" Safety Friction and "Double-Jaw" tap holder gives

**GREATER ACCURACY
and
LESS TAP BREAKAGE**

The Procunier Safety Friction Device is very easily adjusted. With it blind holes can be tapped just as easily as through holes, and without danger of breakage.

*Catalogue 102-B gives complete details of
PROCUNIER Tapping Devices, Quick
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Chucks

At the Price of a Cast Iron Chuck

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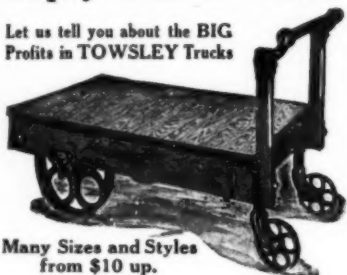
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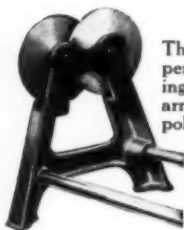
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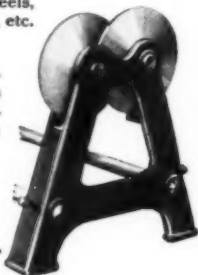
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Will set anywhere and is easily portable. In sizes

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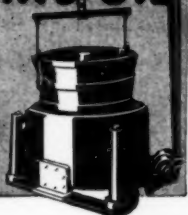


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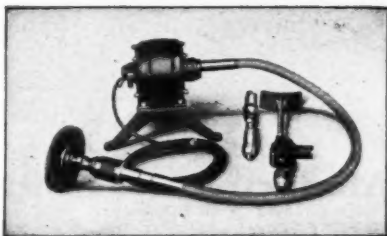
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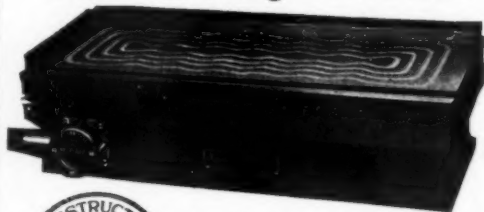
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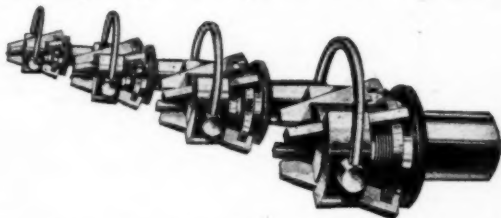
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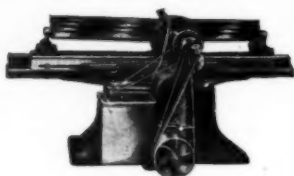
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54" Size, Type "B"

Type B

Made in 11 sizes: 54"-60"-66"-76"
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\$485

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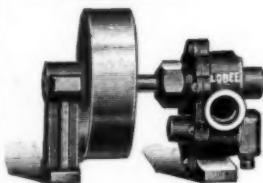
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American Hollow Boring Co., Erie, Pa.

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Production Gauge Co., 2019 Fletcher St.,
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Taylor & Fenn Co., Hartford, Conn.
Thompson Grinder Co., Springfield, Ohio
- Grinding Machines, Knife and Shear Blade**
Rogers & Co., Samuel C., Buffalo, N. Y.
- Grinding Machines, Milling Cutter**
Rogers & Co., Samuel C., Buffalo, N. Y.
- Grinding Machines, Portable Electric**
Cincinnati Electrical Tool Co., Cincinnati, O.
Hiney-Wolf Machine Co., Cincinnati, O.
Keller Mch. Eng. Co., 58A Washington St., Brooklyn, N. Y.
Mall Tool Co., 7320 S. Chicago Ave., Chgo.
National Machine Tool Co., Racine, Wis.
Porter Cable Machine Co., Syracuse, N. Y.
Standard Electrical Tool Co., Cincinnati, O.
Stow Flexible Shaft Co., Philadelphia, Pa.
Strand Co., N. A., 6001 N. Lincoln St., Chgo.
- Grinding Machines, Snagging**
Gallmeyer & Livingston Co., Grand Rapids, Mich.
Hill-Curtis Co., Kalamazoo, Mich.
Jarecki Mch. & T. Co., Grand Rapids, Mich.
- Grinding Machines, Surface**
Gallmeyer & Livingston Co., Grand Rapids, Mich.
Thompson Grinder Co., Springfield, Ohio
- Grinding Machines, Tap**
Gallmeyer & Livingston Co., Grand Rapids, Mich.
- Grinding Machines, Tool**
Hill-Curtis Co., Kalamazoo, Mich.
Standard Electrical Tool Co., Cincinnati, O.
Taylor & Fenn Co., Hartford, Conn.
- Grinding Machines, Universal**
Gallmeyer & Livingston Co., Grand Rapids, Mich.
Thompson Grinder Co., Springfield, Ohio
- Hack Saw Blades**
Armstrong-Blum Mfg. Co., 341 N. Francisco Ave., Chicago
Peerless Machine Co., Racine, Wis.
Racine Tool & Machine Co., Racine, Wis.
Simonds Saw & Steel Co., Fitchburg, Mass.
- Hack Saw Machines**
Armstrong-Blum Mfg. Co., 341 N. Francisco Ave., Chicago
Peerless Machine Co., Racine, Wis.
Racine Tool & Machine Co., Racine, Wis.
- Handles, File**
Hyro Mfg. Co., 352 W. 18th, New York.
- Handles, Soldering Iron**
Hyro Mfg. Co., 352 W. 18th, New York.
- Hob Grinders**
Triplex Machine Tool Corp., 50 Church St., New York
- Hoists, Portable**
Canton Foundry & Machine Co., Canton, Ohio
- Hose Couplings**
Hunt & Son, C. B., Salem, Ohio
- Hydraulic Machinery**
Laurie Mfg. Co., 565 Washington, Chicago
- Jigs and Fixtures**
Hartford Special Mch. Co., Hartford, Conn.
- Keyseating Machines**
Burr & Son, John T., Brooklyn, N. Y.
Chattanooga Mch. Co., Chattanooga, Tenn.
Davis Keyseater Co., Rochester, N. Y.
National Machine Tool Co., Cincinnati
- Lathe Accessories and Attachments**
Claco Machine Tool Co., Cincinnati, O.
- Lathe Turrets**
Maxwell Products Co., Cleveland, O.

Classified Finding Index

Lathes, Bench

Hardinge Brothers, Inc., 1770 Bertean Ave.,
Chicago
Monarch Machine Tool Co., Sidney, O.

Lathes, Engine

American Tool Works Co., Cincinnati, O.
Boye & Emmes Mch. Tool Co., Cincinnati, O.
Bradford Machine Tool Co., Cincinnati, O.
Carroll & Jamieson Mch. Tool Co., Batavia, O.
Cincinnati Lathe & Tool Co., Cincinnati, O.
Cisco Machine Tool Co., Cincinnati, O.
Hamilton Tool Co., Hamilton, O.
Hardinge Brothers, Inc., 1770 Bertean Ave.,
Chicago
LeBlond Mch. Tool Co., R.K., Cincinnati, O.
McCabe Lathe & Machinery Corp., J. J.
142 Broadway, New York
Monarch Machine Tool Co., Sidney, O.
Porter-Cable Machine Co., Syracuse, N. Y.
Springfield Machine Tool Co., Springfield, O.

Lathes, Extension Bed Cap

Bahn-Larson Co., Cincinnati, O.
LeBlond Mch. Tool Co., R.K., Cincinnati, O.

Lathes, Gap

LeBlond Mch. Tool Co., R.K., Cincinnati, O.

Lathes, Manufacturing

Sundstrand Machine Tool Co., Rockford, Ill.
LeBlond Mch. Tool Co., R.K., Cincinnati, O.

Lathes, Precision

LeBlond Mch. Tool Co., R.K., Cincinnati, O.

Lathes, Short Bed

Monarch Machine Tool Co., Sidney, O.
Porter-Cable Machine Co., Syracuse, N. Y.

Lathes, Tool Room

Cisco Machine Tool Co., Cincinnati, Ohio.

Lathes, Turret

Bradford Machine Tool Co., Cincinnati, O.
Monarch Machine Tool Co., Sidney, O.

Mandrels, Expanding

Nicholson & Co., W. H., Wilkes-Barre, Pa.
Western Tool & Mfg. Co., Springfield, O.

Mandrels, Hollow

Hyro Mfg. Co., 352 W. 19th, New York.

Mandrels, Solid

Nicholson & Co., W. H., Wilkes-Barre, Pa.

Milling Attachments

Burke Machine Tool Co., Conneaut, Ohio
Kearney & Trecker Corp., Milwaukee, Wis.
LeBlond Mch. Tool Co., R.K., Cincinnati, O.
Modern-Bond Corp., Wilmington, Del.
Oesterlein Machine Co., Cincinnati, Ohio
Porter-Cable Machine Co., Syracuse, N. Y.
Taylor & Fenn Co., Hartford, Conn.

Milling Machine Tables

Modern-Bond Corp., Wilmington, Del.

Milling Machines, Bench

Burke Machine Tool Co., Conneaut, Ohio
Sundstrand Machine Tool Co., Rockford, Ill.

Milling Machines, Hand

Burke Machine Tool Co., Conneaut, Ohio
Sundstrand Machine Tool Co., Rockford, Ill.
U. S. Machine Tool Co., Cincinnati, O.

Milling Machines, Horizontal

Oesterlein Machine Co., Cincinnati, Ohio

Milling Machines, Manufacturing

Kearney & Trecker Corp., Milwaukee, Wis.

Milling Machines, Plain

Burke Machine Tool Co., Conneaut, Ohio
Gallmeyer & Livingston Co., Grand Rapids,
Mich.
Kearney & Trecker Corp., Milwaukee, Wis.
LeBlond Mch. Tool Co., R.K., Cincinnati, O.
Sundstrand Machine Tool Co., Rockford, Ill.

Milling Machines, Portable

Pedrick Tool & Machine Co., Philadelphia

Milling Machines, Spindle

Taylor & Fenn Co., Hartford, Conn.

Milling Machines, Universal

Kearney & Trecker Corp., Milwaukee, Wis.
LeBlond Mch. Tool Co., R.K., Cincinnati, O.

Milling Machines, Vertical

Burke Machine Tool Co., Conneaut, Ohio
Kearney & Trecker Corp., Milwaukee, Wis.
LeBlond Mch. Tool Co., R.K., Cincinnati, O.
Taylor & Fenn Co., Hartford, Conn.

Mills, Adjustable Hollow

Genesee Mfg. Co., Rochester, N. Y.
Reisner Mch. Tool Corp., Rochester, N. Y.

Motors, Electric

Reliance Electric & Eng. Co., Cleveland

Name Plates, Etched and Stamped

Schwerdtle Stamp Co., Bridgeport, Conn.

Oil Cups

Gits Bros. Mfg. Co., 1940 S. Kilbourn Ave.,
Chicago
Tucker, W. W. & C. F., Hartford, Conn.

Oil Extractors

Tolhurst Machine Works, Troy, N. Y.

Oil Grooving Attachments

Cisco Machine Tool Co., Cincinnati, Ohio

Oil Hole Covers

Tucker, W. W. & C. F., Inc., Hartford, Conn.

Pattern Shop Machinery

Towley Mfg. Co., John T., Cincinnati

Pins, Leader And Dowel

Danly Machine Specialties, Inc., 4913 Lincoln
Ave., Chicago

Pipe Bending Machines

Pedrick Tool & Machine Co., Philadelphia

Pipe Cutters, Hand

Saunders' Sons, D., Inc., Yonkers, N. Y.

Pipe Cutting and Threading Machines

Gateman Mfg. Co., Manitowoc, Wis.
Saunders' Sons, D., Inc., Yonkers, N. Y.

Pipe Threading Dieheads

Saunders' Sons, D., Inc., Yonkers, N. Y.

Pipe Vises

Saunders' Sons, D., Inc., Yonkers, N. Y.

Planers, Valve Seat, Portable

Pedrick Tool & Machine Co., Philadelphia

Planing Machines

Cincinnati Planer Co., Cincinnati, Ohio
Cleveland Planer Co., Cleveland, Ohio

Point Thinning Machines

Oliver Instrument Co., Adrian, Mich.

Classified Finding Index

Polishing and Buffing Machines

Cincinnati Electrical Tool Co., Cincinnati, O.
Cinco Machine Tool Co., Cincinnati, O.
Hill-Curtis Co., Kalamazoo, Mich.
Hisey-Wolf Machine Co., Cincinnati, O.
Mall Tool Co., 7730 S. Chicago Ave., Chicago
New Britain Machine Co., New Britain, Conn.
North Side Tool Co., Dayton, Ohio
Standard Electrical Tool Co., Cincinnati, O.

Presses, Arbor

Atlas Press Co., Kalamazoo, Mich.
Lourie Mfg. Co., 565 Washington, Chicago
Nicholson & Co., W. H., Wilkes-Barre, Pa.
Sheldon Machine Co., 3253 Cottage Grove Ave., Chicago
Wilson, R. K., Buffalo, N. Y.

Presses, Broaching

Lourie Mfg. Co., 565 Washington, Chicago

Presses, Drawing

Lourie Mfg. Co., 565 Washington, Chicago

Presses, Flanging

Lourie Mfg. Co., 565 Washington, Chicago

Presses, Foot

Rockford Iron Works, Rockford, Ill.
Taylor & Fenn Co., Hartford, Conn.

Presses, Forcing

Lourie Mfg. Co., 565 Washington, Chicago
Lucas Machine Tool Co., Cleveland, O.

Presses, Forming

Lourie Mfg. Co., 565 Washington, Chicago

Presses, Power

Hendley & Whittemore Co., Beloit, Wis.
Lourie Mfg. Co., 565 Washington, Chicago
Lucas Machine Tool Co., Cleveland, O.
Rockford Iron Works, Rockford, Ill.

Presses, Punch

Lawthwaite Mch. Co., T. H., 417 E. 31st., N. Y.
Rockford Iron Works, Rockford, Ill.

Presses, Screw

Fall River Grinding & Machine Co., Fall River, Mass.
Jarecki Mch. & T. Co., Grand Rapids, Mich.
Towsley Mfg. Co., John T., Cincinnati

Presses, Wheel

Lourie Mfg. Co., 565 Washington, Chicago

Profiling Machines

Oliver Instrument Co., Adrian, Mich.

Roller Machinery

Avery Drilling Machine Co., Cincinnati

Pulleys, Iron, Solid and Split

Conway Clutch Co., Cincinnati, O.

Pumps, Coolant

Puliso Specialties Co., Blanchester, O.
Lobes Pump & Mch. Co., Buffalo, N. Y.

Pumps, Hydraulic

Lobes Pump & Mch. Co., Buffalo, N. Y.
Lourie Mfg. Co., 565 Washington, Chicago

Pumps, Lubricant

Ruthman Machinery Co., Cincinnati, O.

Punch Press Feeds

Rockford Iron Works, Rockford, Ill.
Wittek Mfg. Co., 2632 S. Kedzie Ave., Chicago

Punch, Shear and Bender, Hand

Armstrong-Blum Mfg. Co., 841 N. Francisco Ave., Chicago

Punches, Hand

Armstrong-Blum Mfg. Co., 841 N. Francisco Ave., Chicago
Hendley & Whittemore Co., Beloit, Wis.
Hyro Mfg. Co., 352 W. 19th, New York
Lawthwaite Mch. Co., T. H., 417 E. 31st St., New York
Whitney Metal Tool Co., Rockford, Ill.

Punches, Power

Hendley & Whittemore Co., Beloit, Wis.

Punches and Dies

Hendley & Whittemore Co., Beloit, Wis.
Lawthwaite Mch. Co., T. H., 417 E. 31st., N. Y.
Rockford Iron Works, Rockford, Ill.

Racks, Bar Stock

New Britain Machine Co., New Britain, Conn.
Pollard Bros. Mfg. Co., 4038 N. Tripp Ave., Chicago

Reamers, Adjustable

Schellenbach-Hunt Tool Co., Cincinnati, O.

Reamers, Expanding

Lambert Mch. & Engin'g Co., Cleveland, O.

Reamer Holders

Nicholson & Co., W. H., Wilkes-Barre, Pa.

Reels, Extension

Cincinnati Specialty Mfg. Co., Cincinnati, O.

Riveting Machine Equipment

Linsley Bros. Co., Bridgeport, Conn.

Riveting Machines

Grant Mfg. & Mch. Co., Bridgeport, Conn.

Roll Cutters

Armstrong-Blum Mfg. Co., 841 N. Francisco Ave., Chicago

Rolling Machines

Hendley & Whittemore Co., Beloit, Wis.
Lawthwaite Mch. Co., T. H., 417 E. 31st., N. Y.

Saw Sharpening Machines

Wardwell Mfg. Co., Cleveland, O.
Rogers & Co., Samuel C., Buffalo, N. Y.

Saws, Metal Cutting Circular and Band

Simonds Saw & Steel Co., Fitchburg, Mass.

Scraping Machines, Hand & Pneumatic

Anderson Brothers Mfg. Co., Rockford, Ill.

Screw Drivers, Electric

Hisey-Wolf Machine Co., Cincinnati, O.

Screw Driving Machines, Automatic

Reynolds Machine Co., Masonville, Ohio

Screw Machine Products

National Acme Co., Cleveland, Ohio

Screw Machines, Automatic

National Acme Co., Cleveland, Ohio
New Britain Mch. Co., New Britain, Conn.

Seam Welders, Electric

Welding Appliance Co., 2111 W. Lake St., Chicago

Set-Up Appliances

Standard Shop Equip. Co., Inc., Philadelphia

Shafts, Flexible

Keller Mech. Eng. Corp., 58A Washington St., Brooklyn, N. Y.
Mall Tool Co., 7730 S. Chicago Ave., Chicago
Stow Flexible Shaft Co., Philadelphia, Pa.
Strand Co., N. A., 6001 N. Lincoln St., Chicago

Shafts, Steel

American Hollow Boring Co., Erie, Pa.

Shaping Machines

American Tool Works Co., Cincinnati, O.
Osborne & Sexton Machy. Co., Columbus, O.
Rhodes Mfg. Co., Hartford, Conn.
Smith & Millie Co., Cincinnati
Springfield Machine Tool Co., Springfield, O.

Shears, Alligator

Canton Foundry & Machine Co., Canton, O.

Shears, Hand

Armstrong-Blum Mfg. Co., 841 N. Francisco Ave., Chicago
Hendley & Whittemore Co., Beloit, Wis.
Lawthwaite Machine Co., T. H., 417 E. 31st St., New York
Tucker, W. W. & C. F., Inc., Hartford, Conn.
Whitney Metal Tool Co., Rockford, Ill.

Classified Finding Index

Shears, Power
Handley & Whittemore Co., Biele, Wis.

Slotting Machines
Rhodes Mfg. Co., Hartford, Conn.

Spacing Washers
Detroit Stamping Co., Detroit, Mich.

Special Tools and Machinery
Bradford Machine Tool Co., Cincinnati, O.
Foots Bros. Gear & Machine Co., 213 Curtis St., Chicago
Gateman Mfg. Co., Manitowoc, Wis.
Stecher Co., Chas., 2452 N. Greenview Ave., Chicago
U. S. Tool Co., Inc., Ampere, N. J.

Speed Reducers
Foots Bros. Gear & Machine Co., 213 Curtis St., Chicago

Sprockets
Foots Bros. Gear & Machine Co., 213 Curtis St., Chicago
Massachusetts Gear & T. Co., Woburn, Mass.

Stamps, Steel and Rubber
Schwerdtle Stamp Co., Bridgeport, Conn.

Stencils, Brass and Oil Board
Schwerdtle Stamp Co., Bridgeport, Conn.

Steels and Chairs, Factory
Chicago Wire Chair Co., 619 N. La Salle St., Chicago
Pollard Bros. Mfg. Co., 4008 N. Tripp Ave., Chicago

Straightening Machines
Springfield Machine Tool Co., Springfield, O.
Towsley Mfg. Co., John T., Cincinnati
Whitney Metal Tool Co., Rockford, Ill.

Stud Setters
Procurer Safety Chuck Co., 18 S. Clinton St., Chicago

Tap Extractors
Walton Co., Hartford, Conn.

Tap Holders
Gateman Mfg. Co., Manitowoc, Wis.
Procurer Safety Chuck Co., 18 S. Clinton St., Chicago

Tapping Machines and Attachments
Avey Drilling Machine Co., Cincinnati
Burke Machine Tool Co., Cincinnati, Ohio
Cisco Machine Tool Co., Cincinnati, Ohio
Eastern Tube & Tool Co., Inc., 680 Johnson Ave., Brooklyn, N. Y.
Gateman Mfg. Co., Manitowoc, Wis.
Hammond Mfg. Co., Cleveland, Ohio
Leland-Gifford Co., Worcester, Mass.
Procurer Safety Chuck Co., 18 S. Clinton St., Chicago

Thread Shafts
Rickert-Shafer Co., Erie, Pa.
Whitney Metal Tool Co., Rockford, Ill.

Thread Dies
Colven, J. M., Yonkers, N. Y.

Thread Millers
Lea-Bradley Co., Cleveland, Ohio
Triplex Machine Tool Corp., 50 Church St., New York

Thread Milling Attachments
Ceco Machine Tool Co., Cincinnati, O.

Threading Machines
Gateman Mfg. Co., Manitowoc, Wis.
Rickert-Shafer Co., Erie, Pa.

Threading Tools
Armstrong Bros. Tool Co., 808 N. Francisco Ave., Chicago

Tool Holder Bits
Simonds Saw & Steel Co., Fitchburg, Mass.

Tool Holders
Armstrong Bros. Tool Co., 808 N. Francisco Ave., Chicago
Western Tool & Mfg. Co., Springfield, O.

Tool Racks
Chicago Wire Chair Co., 619 N. La Salle St., Chicago

Tool Stands
Pollard Bros. Mfg. Co., 4008 N. Tripp Ave., Chicago

Tools, Boring
Armstrong Bros. Tool Co., 808 N. Francisco Ave., Chicago

Tools, Lathe and Planer
Armstrong Bros. Tool Co., 808 N. Francisco Ave., Chicago

Tools, Machinists'
Armstrong Bros. Tool Co., 808 N. Francisco Ave., Chicago

Tools, Spot Facing
Grenoe Mfg. Co., Rochester, N. Y.
Reisinger Mch. Tool Corp., Rochester, N. Y.

Trucks, Machine Shop
New Britain Machine Co., New Britain, Conn.
Pollard Bros. Mfg. Co., 4008 N. Tripp Ave., Chicago
Towsley Mfg. Co., John T., Cincinnati

Turntables
Canton Foundry & Machine Co., Canton, O.

Universal Joints
American Tool Works, Inc., Hartford, Conn.
Borgeson Mfg. Co., Inc., Torrington, Conn.
Boston Gear Works Sales Company, Norfolk Downs, Mass.

Used and Rebuilt Machinery
Actna Mch. Co., 565 W. Washington, Chgo.
Bath & Co., Cyril J., Cleveland, O.
Bennett Mch. Co., 60 Church St., New York
Bernstein & Co., Geo. M., 549 W. Washington Blvd., Chicago

Brown Machinery Co., St. Louis, Mo.
Brown & Brown Machinery Co., Providence, R. I.
Carlson Machinery Co., Davenport, Iowa
Central States Machinery Co., 134 South Clinton, Chicago

Cincinnati Mch. & Supply Co., Cincinnati, O.
Clark Machinery Co., Cleveland, O.
Davis Machinery Exchange, Toledo, O.
Donahue Steel Products Co., 74th and Ashland Ave., Chicago

Eastern Machinery Co., Cincinnati, O.
Emmerman & Co., Louis E., 1761 Einton Ave., Chicago

Empire Machinery Exchange Co., Inc., Cleveland, Ohio
Esley Machinery Co., E. L., 555 Washington Blvd., Chicago

Feister Machinery Co., Cleveland, O.
Harris Bros. Co., 35th & Iron, Chicago
Hill, Clarke & Co., 649 W. Washington Blvd., Chicago

Hymen & Sons, Joseph, Philadelphia
Indianapolis Mch. & Supply Co., Indianapolis, Ind.

International Mch. Co., Detroit, Mich.
Johnson & Sons Machinery Co., Wm. C., St. Louis, Mo.

Jones Machine Tool Co., Cincinnati, O.
Kinney Co., E. A., Cincinnati, O.
Klauber Mch. Co., E. L., St. Louis

Lee Machinery Co., Inc., Detroit, Mich.
Little Co., W. P., Cleveland, O.
McCabe Lathe & Machinery Corp., J. J., 149 Broadway, New York

McDonald Machinery Co., St. Louis
McMullen Mch. Co., Grand Rapids, Mich.
Manning, Maxwell & Moore, Inc., 37 No. Jefferson, Chicago

Marr-Gallbreath Mch. Co., Pittsburgh, Pa.
Marsh Machinery Co., A. E., Cleveland, O.
Midland Equipment Co., 612 W. Van Buren, Chicago

Midwest Equipment Co., 1719 W. Van Buren, Chicago
Mid-West Machine Tool & Supply Company, Davenport, Iowa

Miles Machinery Co., Saginaw, W. S., Mich.
Molitor Mch. Co., Chas., 118 S. Clinton St., Chicago
Moray and Co., Inc., 408 Broome St., N. Y.

Classified Finding Index

Used and Rebuilt Machinery—Cont.

Morris Machinery Co., Inc., Newark, N. J.
Metch & Merryweather Machinery Co.,
Cleveland, O.

Nelson Machinery Co., Green Bay, Wis.

Niles Tool Works Co., Hamilton, O.

Horton-Broadway Mch. Co., Cincinnati, O.

O'Brien Machinery Co., Philadelphia

Osborne & Sexton Mch. Co., Columbus, O.

Randle Machinery Co., Cincinnati, O.

Reeve-Fritts Co., 37 S. Desplaines, Chicago

Reliance Mch. Sales Co., Pittsburgh, Pa.

Riverside Machinery Depot, Detroit, Mich.

Rosenfeld Mch. Co., 943 W. Lake St., Chgo.

Russell Machine Co., Pittsburgh, Pa.

Scott-Bansbach Mch. Co., 130 S. Clinton,
Chicago

Selfrent-Eltad Machinery Co., Dayton, O.

Severin-Strafer Machinery Corp., 30 Church
St., New York

Simmons Machine Tool Corp., Albany, N. Y.

Stoebel Machinery Co., A. M., 418 Mid-City
Bank Bldg., Chicago

Strong, Carlisle & Hammond Co., Cleveland

Sun Machinery Co., Newark, N. J.

Syracuse Supply Co., Syracuse, N. Y.

Taylor-Hall Welding Corp., Worcester, Mass.

Tranter Mfg. Co., Pittsburgh, Pa.

Tuber, Velick & Co., Inc., Lake & Desplaines
St., Chicago

United Mch. & Supply Co., St. Louis

Wayne Machinery Co., Ft. Wayne, Ind.

Wertman Mch. Co., M. A., Cleveland, O.

West Penn Machinery Co., Pittsburgh, Pa.

White Machy. Co., A. D., 108 N. Jefferson
St., Chicago

Winterer, Herman L., Philadelphia

Vises, Drilling Machine

Armstrong-Hum Mfg. Co., 341 N. Francisco
Av., Chicago

Armstrong Bros. Tool Co., 308 N. Francisco
Av., Chicago

Central Distributing Co., Detroit, Mich.

Sheldon Machine Co., 3253 Cottage Grove
Ave., Chicago

Marsh Machinery Co., A. R., Cleveland, Ohio

Martin Tool & Die Works, J. H., Springfield, O.

Vises, Machinists'

New Britain Machine Co., New Britain, Conn.

Sheldon Machine Co., 3253 Cottage Grove
Ave., Chicago

Western Tool & Mfg. Co., Springfield, O.

Vises, Milling Machine

Hartford Special Mch. Co., Hartford, Conn.

Marsh Machinery Co., A. R., Cleveland, Ohio

Sheldon Machine Co., 3253 Cottage Grove
Ave., Chicago

Vises, Shaper

Sheldon Machine Co., 3253 Cottage Grove
Ave., Chicago

Welders, Electric Spot

Taylor-Winhold Corp., Warren, O.

Welding Head, Seam, Electric

Welding Appliance Co., 2111 W. Lake St.,
Chicago

Wood Working Machinery

Hendley & Whittemore Co., Becht, Wis.

New Britain Machine Co., New Britain, Conn.

Porter-Cable Machine Co., Syracuse, N. Y.

Towley Mfg. Co., John T., Cincinnati

Worms

Massachusetts Gear & T. Co., Woburn, Mass.

Wrenches, Nut

Greene, Tweed & Co., 109 Duane St., N. Y.

Wrenches, Ratchet

Greene, Tweed & Co., 109 Duane St., N. Y.

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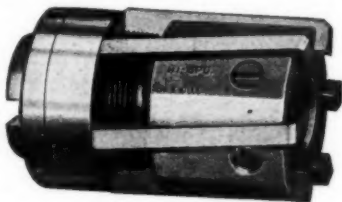
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Used and Rebuilt Machinery Section

Lists of Used and Rebuilt Machinery, either For Sale, Wanted or For Exchange, set in uniform style, will be published in the Classified Section at the rate of **50 cents a line**, across the page, each issue, plus **\$2.50** for name and address. Minimum charge, **\$5.00**. No display permitted.

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Asher Machinery Co., - **217 Centre St., New York, N. Y.**
 Drill press, 36" Cincinnati sliding hd., direct motor drive without mtr. \$ 400.
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 Hammer, No. 150 W. & W. air.
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 Miller, No. 2 B. & S. univ. with d. h.
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 Lathes, 18"x9" Chard, same as above, (7).
 Lathes, 26"x12' Putnam, same as above, (2).
 We buy, sell and exchange.

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 Band saw, 12" S. & B. bench, with motor.
 Grinder, No. 3 Abrasive surface, motor drive with motor, and 8"x20" magnetic chuck.
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 Lathe, 18"x8' Whitcomb-Blaisdell, with chuck.

FOR SALE BY

J. Bleser Mfg. Co., **16th & Madison Sts., Springfield, Illinois**
 Battery charger, G. E., 16 batt. cap.
 Grinders, Landis No. 1 $\frac{1}{2}$ & 2 univ.
 Lathe, Lodge & S. 36"x18', m. d.
 Lathe, Prentiss 25"x16', s. c. g.
 Lathe, engine, 16"x8' G. & K., q. c.
 Lathe, 14"x6' Monarch, q. c.
 Miller, No. 3 univ., O. type.
 Millers, No. 3 Burke, Rockford.
 Miller, No. 2 Hendey universal.
 Punch press, No. 3-A Walsh arch.
 Screw machine, No. 4 Warner & S.
 Shapers, Smith & Mills, 16", 12".

FOR SALE BY

Rosenfeld Machinery Co., - **942-944 W. Lake St., Chicago, Ill.**
 Broaching machine, No. 2 LaPointe (New London), with broaches.
 Grinder, No. 10 Besly disc.
 Milling machine, No. 2 Cincinnati universal, complete.
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Boring mill, Lucas horizontal, 3" bar, single pulley drive; 60" Bullard motor drive, 220 v., 60 cy., 3 ph.
Bulldozer 75-ton Lorie hyd., m. d.
Grinders, No. 7 Gardner b. b. d. e., univ. tbl.; Nos. 26-18" Besly dbl. spd. disc, complete; Detroit centerless, arranged for belt drive.
Hammer, 800 lb. Erie, drop board.
Miller, 70"x22" Sellers planer type, 5 heads, heavy duty.
Planers, 56x56x12' Gray, 2 heads; 60x60x18' Gray, 2 heads.

Presses & pumps, hydraulic, 300 ton
Perrin, 2-15 ton, comp. with pumps,
Presses, Bliss, arch., 2" str., 28" bet. column; R. & K. dbl. ck., 36" bet. column, roller feed, 24" stroke; No. 161 Toledo knuckle joint.
Punch and shears, No. 8 Whiting, 26" thrt., arct. jaw, motor drive.
Riveters, 3-A, 4-A & 5-A, high spd.
Rolls, 42" Int. type bending, 4" cap.; 8" Pyramid type, 3" cap.; 12" bending, (not drop end) cap. 1 1/2".
Shears, alligator, D. & K., all steel; Bliss rotary, 12 gauge.

FOR SALE BY

Brownell Machinery Co., 150 Pine St., Providence, R. I.

DRILLS.

8' Prentice Bros. plain radial.
No. 1 Avey 2-spd. h. s., b. b. drill.

26" Barnes sliding head.
No. 1 Langelier bench.

GEAR CUTTERS.

No. 3 Brown & Sharpe, 26"x8", spur.
No. 3 Brown & Sharpe, 26"x8", spur.

No. 2 Bilton automatic gear millers.

GRINDERS.

No. 12 B. & S. pl., cyl., 8x36, s. p. d.
No. 11 B. & S. plain, 4x30.
No. 2 B. & S., surface.
No. 1 B. & S., surface.

No. 1 Norton, tool and cutter.
Nos. 2 & 3 B. & S. cutter & reamer.
20" Diamond standard.
14" Blount wet tool.

LATHES.

30"x20' Fitchburg.
30"x14' Lodge & Shipley.
22"x26' Lodge & Shipley, g. h.

24"x16' R. K. LeBlond.
12"x 8' Reed.
12"x 8' Vernon, q. c. g.

MILLING MACHINES.

4-A Brown & Sharpe universal.
4-B B. & S. heavy, plain, m. d.
4 G. S. Hendey plain, with vert. att.
3-G. H. LeBlond heavy, plain.
2-B B. & S. heavy, plain, s. p. d.

14 Brown & Sharpe universal.
4 Van Norman duplex.
No. 2 Brown & Sharpe vertical.
3-H Becker vertical profiler.
Newton slab.

PLANERS AND SHAPERS

54"x42"x12' Gray, 3 heads.
36"x26"x10' Woodward, heavy m. d., 3 heads.
32"x32"x 8' Powell.
17"x20"x 4' Whitcomb.

24" Potter & Johnston shaper.
20" Smith & Mills, shaper, s. p. d.
16" Stockbridge shaper, plain.
15" Potter & Johnston shaper.
Boynton & Plummer shaper.

POWER & FOOT PRESSES.

No. 5 Manville s. a., p. p. with roll feed.
No. 4 Manville s. a., p. p. with ratchet dial feed.
No. 1 Sidney s. a. inclinable 2".
No. 2-A Standard s. a., 1"

No. 1 Bliss d. a. cam.
No. 1 Standard power screw or broaching press, 7".
No. 68 Bliss d. a. cam.
Bosworth foot presses, new (5).

SCREW MACHINES.

No. 2-G Brown & Sharpe automatic.
No. 3 Brown & Sharpe automatic.
No. 6 Brown & Sharpe automatic.
No. 0 Brown & Sharpe, wire feed.

14"x18" Pratt & Whitney, b. g.
3"x36" Jones & Lamson.
No. 3 Warner & Swasey, g. f. h.

MISCELLANEOUS.

Band saw, 12" H. & R. metal cutting
Band saw 32" Crescent wood work.
Filing machine, Thurston.
Hammer, 80 lbs. Standard drop automatic.

Hammer, 125 lbs. Dupont power.
Hammer, 200 lbs. Beaudry power.
Slotter, 12" Hement-Miles.
Winding machines No. 97 universal, paper chute and feed mechanism.

USED AND REBUILT MACHINERY

FOR SALE BY

Severin-Strafer Machinery Corp., 30 Church St., New York City

BORING MILLS, VERTICAL.

- | | |
|-------------------------------------|--------------------------------------|
| 14"-20' Betts, extension type. | 48" Gisholt, rapid traverse. |
| 60" Bullard, single pulley drive. | 42" Bullard, turret head. |
| 38"-44" Niles Bement Pond side hd. | 42" King modern rapid traverse. |
| mill, single pulley drive, chuck | 52" Niles-B.-P. turret & plain head. |
| table, rapid traverse, latest type. | |

BORING MILLS HORIZONTAL.

- | | |
|---------------------------------------|--------------------------------------|
| 5" bar Newark, knee type. | 4 1/2" bar Niles.-B.-P., floor type. |
| 5" bar Beamen & Smith floor type. | 3" bar Lucas single pulley drive. |
| No. 1 Betts 3" bar, knee type. | 3" bar Betts, knee type. |
| 5" bar Deitrich & Harvey, floor type. | |

BORING BARS.

- 5-new Underwood portable outfits, 4" bars 8' long, with geared feed, driving mechanism, 2 spiders, 2 bushings, 1 cutter head, each \$325.

MILLING MACHINES.

- | | |
|-------------------------------------|-----------------------------|
| No. 2-B heavy Brown & Sharpe. | No. 2A Hendy-Norton univ. |
| No. 3 Cincinnati plain, high power. | No. 4 Cincinnati, vertical. |

DRILLS.

- | | |
|--|----------------------------|
| 2 1/2' Mueller, speed box. | 24" Aurora sliding head. |
| 5' Niles B. P., semi-universal radial, | 26" Prentice sliding head. |
| speed box drive, tilting table. | 36" Aurora, sliding head. |
| No. 25 Foote-Burt, heavy duty. | 2-spindle Avey, h. s. |
| 23" Snyder (new). | |

GRINDERS.

- | | |
|------------------------------|-----------------------|
| No. 12 Brown & Sharpe plain. | 10"x36" Norton plain. |
| No. 13 Brown & Sharpe plain. | 84" Diamond surface. |

LATHES.

- | | |
|--------------------------------------|--------------------------------------|
| 34"x24' H. S. and M. quick change. | 19"x8' LeBlond, heavy duty. |
| 48"x18' Fifeild t. g. | 18"x18' Reed, belt drive. |
| 36"x16' N. B. P., motor drive. | 18"x8' Fairbanks, double b. g. |
| 30"x16' N. B. P., motor drive, d. c. | 16"x8' Hendey. |
| 24"x12' Reed-Prentice, g. h. | 16"x6' Putnam, rebuilt. |
| 23"x14' LeBlond, heavy duty. | 16"x8' Pratt & Whitney, g. h. |
| 22"x12' Niles oil country. | 13"x8' Willard 3 step cone, d. b. g. |

TURRET LATHES.

- | | |
|---------------------------------|-----------------------------------|
| No. 3A Warner & S. chuck equip. | No. 4 Warner & Swasey with equip. |
| No. 2 Foster, screw machine. | No. 1 B. & O. Fox monitor. |

PLANERS.

- | | |
|--|------------------------------------|
| 96"x72"x24' D. & H. openside. | 42"x42"x30' new Niles-Bement-Pond. |
| 72"x72"x18' Pond, rev. motor drive. | 42"x42"x36' N. B. P., rev. m. d. |
| 60"x48"x14' Cincinnati, gr. box, m. d. | 30"x30"x16' Gray, 3 heads. |
| 48"x48"x14' Patch, 4 heads, b. d. | 22"x22"x4' Whitcomb, 1 head. |

PUNCHES AND SHEARS.

- | | |
|-------------------------------------|---|
| No. 5 Hillis & Jones 48" th., m. d. | No. 4 Hillis & Jones double, 48". |
| No. 2 Hillis & Jones 20" throat. | No. 4 Hillis & Jones horiz., 1 1/2"x1". |

SHAPERS.

- | | |
|-------------------------------------|-----------------------------------|
| 24" Gould & Eberhardt, motor drive. | 20" Queen City, belt drive. |
| 21" Smith & Mills, belt drive. | 16" Cincinnati, b. g. belt drive. |

MISCELLANEOUS.

- | | |
|--|---------------------------------------|
| Bending rolls, 12' Niles, 1/2 cap. | Hammer, No. 400 Bliss board drop. |
| Buffing jacks and wheels. | Hydraulic forging press, 1200 tons. |
| Chain blocks, 1-ton with trolleys. | Pipe machine, Saunders 6". |
| Cold saw Newton 32". | Planer drive, 20 h. p., 220 v., d. c. |
| Core wire straightener, 1/2" to 5/16". | Pumps, steam, 6x4x6 brass. |
| Elevator, portable, 3'x4'x18". | Pumps, steam, 8x12x12 brass. |
| Furnaces, Strong, Carlisle & H. | Riveter, Allen pinch type. |
| Gear cutter, No. 4-36" B. & S. auto. | Sand slinger for large foundry. |
| Gear cutter, No. 2 Hilton. | Saw, Klem No. 1 band saw. |
| Generator, 100 k. w., a. c. Deisel. | Time clocks, shop (12). |
| Hammer, steam, 400 lb. Chambersab. | |

USED AND REBUILT MACHINERY

FOR SALE BY

The O'Brien Machinery Co.

113 N. Third St., Philadelphia, Pa.

Boring mill, No. 14 Beaman Smith horizontal, floor type, 31" bar.
Boring mill, 48" Bement car wheel.
Die sinker, No. 2 Pratt & Whitney.
Die sinker, No. 3 Pratt & Whitney.
Die sinker, No. 4 Pratt & Whitney.
Drill, 32" Aurora, motor driven.
Drill, radial, 24" Morris s. p. dr.
Drill, radial, 6" Dreses full universal.
Gear cutter 30" Whiton, belt.
Grinder, 14"x96" Norton plain, belt.
Grinder, disc No. 8-30" Badger ball bearing.
Hammer, 2000 lbs. Chambersburg, double frame, steam forging.
Hammer, 1100 lb. N. B. P., sgl. fr.
Lathe, 30"x26" Lodge & S., belt, q. c. g.
Lathe, 30"x30" Harrington.
Lathe, 36"x20" Sidney, q. c. g.
Lathe, 48"x12" Harrington, belt.

Miller, No. 4 Cinti. vertical, mtr. dr.
Milling mche., No. 3 Garvin duplex.
Pipe machines, 2", 4", 6", 8" & 12"
Oster, Cox, Williams, Eaton-Cole & Burnham and Jarecki makes, belt or motor driven, comp. stock.
Pipe machine, 2" Landis, belt.
Planer, 36"x36"x24" Bement, 4 hds.
Planer, 54"x54"x16" Pond, motor drive, 4 heads.
Press, No. 734 Bliss trimming press.
Press, No. 37 Niagara, 1100 lb. fly-wheel, solid back.
Shaper, 18" Cincinnati, one traveling head, 2 tables.
Shapers, 20" Stockbridge, with speed box, (2).
Shaper, 24" Averbeck, s. p. drive.
Shaper, 32" G. & E., s. p. drive.
Shear, Buffalo bar, cap. 2" round.

FOR SALE BY

West Penn Machinery Company

1208 House Building,

Pittsburgh, Pa.

Air comp., 10x10" Laidlaw, duplex.
Bolt cutters, 14", 2", 24", 4" Landis.
Boring mills, 30" to 16".
Bulldozer, No. 25 W. & W.
Drills, 14" to 25".
Drill, mult., No. 5 Fox, 10-spindles.
Drill, radial, 6" Prentice, s. p. d.
Flanger, McCabe, 4" capacity.
Gear cutters, spur and bevel.
Gear cutter, spur, No. 6 Brown & S.
Gear hobber, 96" Gould & E.
Gear planer, 24" Gleason, bevel.
Grinder, 12"x96" Norton, b. d.
Grinder, disc, No. 52 Besly.
Grinder, planer type, 51" Springfield.
Grinder, No. 22 Heald surf., 12" chk.
Grinder, No. 16 Blanchard.
Hammer, 75 lb. Bradley upr. helve.
Hammer, 100 lb. Bradley upright.
Hammer, 200 lb. Beaudry, upright.
Hammers, 2-B, 3-B & 4-B Nazel.
Hammers, steam 600 lb. to 3000 lb.
Hammers, board drop, 1000 lb.
Keyseater, No. 2 Mitts & Merrill.
Lathes, 12" to 60".
Lathe, 18"x10" American, grd. head.
Lathe, turret, 26" Libby.
Miller, plain, No. 3-B Brown & S.
Miller, plain No. 3-B Milwaukee.
Miller, univ. No. 2 Hendey, s. p. d.
Miller, univ. No. 3 Brown & S.
Miller, slab, 24"x20"x14" Ingersoll.
Pipe machines, 24" to 12".
Planer, 36"x36"x16" N-B.-P. like new.
Planer, 42"x42"x12" Cincinnati, 2 hds.
Planer, 96"x96"x20" Pond, 4 hds., m. d.
Planer, 42"x42"x12" Detrick & H. o. s.

Planer, rotary, 48" Newton.
Press, geared, No. 34 Toledo.
Press, No. 374 Bliss, s. s., 6" stroke.
Press, toggle, No. 168 Toledo.
Press, wheel, 400-ton Caldwell.
Punch, hor., Cleveland, 1" thru 1".
Punch & s., L. & A. 30" thr., 14" thru 1".
Punch & shear 36" arch jaw 14-1".
Riveter, Hanna, 18" thrt., 15" gap.
Riveter, stake, No. 6 Whiting, 48" thrt.
Rolling mill, 18" Standard.
Rolls, bending, 10"x8" Wickes.
Saw, cold, 24" Hunter high speed.
Shaper, 16" Smith & Mills.
Shaper, 24" Gould & Eberhardt.
Shear, angle, L. & A., 6"x6"x4".
Shear, alligator, Lewis 14" square.
Shear, alligator, No. 5 Canton, 3" sq.
Shear, alligator, United, 5"x5".
Shear, bevel, Lennox 4".
Shear, guil. No. 0 H. & J., 14" round.
Shear, plate 10"x8" Morgan, 24" gap.
Shear, plate, 15"x4" United, 24" gap.
Shear, rotary, No. 3 Quickwork 4".
Shear, rotary, No. 6 Quickwork 4".
Shear, aqua, 12"x14 ga. Peerless.
Shear, sq., 10"x3/16" W. & R., m. d.
Shear, squar, 72"x14 ga. Niagara.
Shear, squar, 30"x18 ga. Niagara, m. d.
Shear, squar., 52"x16 ga. Toledo.
Straightener, bar, No. 4-D K. & R.
Straightener, beam, No. 4 H. & J.
Swaging machine, 1" Langelier.
Testing machine, 100,000 lbs.
Welder, Gibb spot, 4", 32" thrt.
Upsetters, 14" to 5".

USED AND REBUILT MACHINERY

FOR SALE BY

Herman L. Winterer,

943-53 N. Front St., Philadelphia, Pa.

LATHES.

43" x 17' 4" Bement-Miles.
37 1/2" x 14' Johnson d. b. g., q. c. f., t. a.
32" x 12' Pittsburgh, heavy duty, q. c. g.
27" x 12' Bullard.
26" x 16' 6" American, q. c. g., grd. hd.
26" x 11' Wickes, q. c. g.
28" x 10' Niles, q. c. g.
19" x 10' Draper, patent head.

18" x 7' Chard, d. b. g., semi q. c. g.
15" x 8' Sidney, q. c., d. b. g., t. a.
14" x 6' Springfield, latest type, tool room type, t. a.
14" x 6' Lodge & Shipley, patent head, taper, pan bed.
14" x 8' Lodge & Shipley, q. c.

TURRET LATHES.

34 x 28" Pond, triangle.
3 x 36" Pratt & Whitney, hollow hex.
19" x 7' Fay & Scott, back grd.
No. 224 Garvin Monitor.
14" x 6' Warner & Swasey.

No. 3 Foster sc. machines 1-5/16" wire feed, (2).
14" x 8" Cincinnati-Acme, wire feed.
No. 4 B. & S., bar feed, all auto. fda.
No. 2 Smurr & Kamen, wire fd., (5).

DRILL PRESSES.

48" Almond, sens. radial, post type.
40" Barnes horizontal radials, (2).
26" Aurora, sliding head.

24" Foote-Burt heavy duty.
21" Aurora, b. g., p. f.

MILLING MACHINES.

No. 5 Cincinnati, table 9 1/2 x 50 1/2".
No. 5 Brown & Sharpe vertical.
No. 3 Brown & Sharpe, plain, cone type.
No. 3 Hendey, q. c. g.

No. 1 Van Norman hand miller.
No. 3 Becker-Brainard, new model, q. c. g., vertical attachment.
No. 3 Becker universal milling machine.

PLANERS AND SHAPERS.

48" x 37" x 9' Sellers, 2 heads.
48" x 48" x 12' Gray, 2 heads.
42" x 36" x 14' Cincinnati, 4 heads.
29" Woodward & P., crk., gear box.

48" Morton draw-cut shaper.
30" x 30" x 8' American, 1 head.
15" Lodge & Davis shaper,

BORING MILLS.

Boring mill, car wheel, 60" Newton.
42" Bullard, 2 swivel heads, (2).
Boring mill, No. 1 Sellers hor., 2 1/2" bar.

Boring, drilling and milling machine, 17 1/2" Bement-Miles horiz.

PIPE AND BOLT MACHINES.

4" & 8" Eaton, Cole & B., pipe.
6" Cox, quick opening dies.

4" Armstrong, No. 00 pipe machine.

MISCELLANEOUS.

Arbor press, No. 8 Greenerd, 36" bet. columns.
Centering mche., 8" Whiton, dbl. sp.
Cold saw, No. 6 Nutter & Barnes.
Elec. hoist, 1-ton Link Belt, 2 ph. a. c.
Electric hoist, 1-ton Shepard, 220 v., d. c., (2).
Generator, No. 100 Oxweld acetyl.
Grinder, 13 1/2" x 5' Landis universal.
Grinder, No. 8 Diamond, double end, heavy type.
Grinders, disc, No. 17 Besly.
Grinders, several dbl. end electric.
Hammers, 15, 25 & 40 lbs. Bradley helve.
Hammer, 50 lb. Little Giant, belt dr.
Hammers, 60 lb. Bellefonte upright, 2.
Keyseater, Morton 18" stroke.
Keyseater, No. 4 Catlin, m. d.
Punch press, No. 2 Cons., flywheel.

Punch or gate shears, 72" Cleveland multiple, 15" throat.
Punch & shear, No. 4 Long & A., double end, 21" throats.
Punch and riveters, new Doty (2), one 35" stake and one 30 1/2" stake.
Punch presses, all sizes, (55).
Riveter, 3/16" Grant, on column.
Riveter, air, 6" gap Allen, cap. 1 1/2".
Riveter, air, 6" Allen, cap. 1".
Saw, No. 7K Atkins Kwick-Kut.
Rolls, 4' drop end corrugated.
Saw, Q. M. & S. No. 4-B universal, 33" blade.
Shear, 52" P. S. & W. pwr. squaring.
Shear, 8' Ohl, No. 20 ga.
Slotter, 14" Niles.
Slotter, 3 1/2" Rhodes vertical.
Tire press, hyd., 60-ton Defiance.
Tooth rounding machine, S. & S.

Send for our latest 44-page illustrated Catalog and Price List.

USED AND REBUILT MACHINERY

FOR SALE BY

Fitchburg Grinding Machine Corporation, Fitchburg, Mass.

LATHES.

LeBlond 14"x6'. Greaves-Klusman 18"x8'.
Reed-Prentice 16"x8'. Perkins threading 21"x10'.
Putnam 14"x6'. New Haven 32"x12'.

PLANERS.

42"x36"x22' Whitcomb. 17"x20"x8' Whitcomb.
32"x26"x16' Whitcomb, 2 heads. 30"x30"x8' Powell, 2 heads.
22"x22"x6' Whitcomb.

TURRET LATHES.

24"x24" J. & L., chuck equipment. 24"x26" Greenlee.
3x36" J. & L., chuck equipment, 16" Reed-Prentice.
double spindle. 21" Gisholt.

MILLERS.

No. 1 Steptoe.

BORING MILLS.

3"x24" Rockford.

24" Reed-Prentice.

RADIAL DRILL.

24" Dreses.

FOR SALE BY

Scott-Banabach Machinery Co., 130 So. Clinton St., Chicago, Ill.

Auto. screw mach., B. & S. No. 19, h. s. (3) each.....	\$ 500.
Auto. screw mach., B. & S. No. 00, with slotting.....	450.
Auto. screw mach., B. & S. No. 00, without slotting.....	400.
Auto. screw mach., B. & S. No. 0, without slotting.....	500.
Auto. screw mach., Cincinnati, 5-spindle, 1".....	900.
Auto. screw mach., Cleveland, 1" Model A.....	150.
Bolt cutter, 2" D. & H., double head.....	300.
Boring mill, Morris horiz., motor drive, 1-15/16" spindle.....	1,000.
Boring mill, 34" Colburn vertical.....	350.
Brake, No. 18, gauge GAX6' Robinson.....	65.
Centering machine, Whiton swivel.....	75.
Drill, 1-spindle L-G 14", high speed, ball bearing.....	175.
Drill, 4-spindle Avey, high speed, ball bearing.....	350.
Drill, 4-spindle Allen, high speed, ball bearing.....	350.
Drill, radial, 3" American sensitive.....	200.
Filling machine, Cochran-Bly, floor type.....	100.
Grinder, No. 1 Norton universal, cutter and tool, all att.....	500.
Grinder, No. 65 Heald, with fixtures, b. b. spindle.....	900.
Hammer, 50 lbs., No. 1 Standard drop.....	150.
Lathes, 14x8 Hendey, quick change, with taper.....	500.
Lathe, 18x12 Schumacher & Boye, quick change with chuck.....	500.
Lathe, 20x12 Rahn-Larmon, quick change with chuck.....	350.
Lathe, 20x10 Bradford, with chuck.....	400.
Miller, No. 2 Becker vertical.....	300.
Miller, No. 4-B Becker vertical, \$350, with rotary table.....	425.
Miller, No. 3H LeBlond plain, heavy duty.....	1,100.
Miller, Whitney, Standard and U. S., hand.....	125.
Miller, No. 12 Pratt & Whitney automatic.....	600.
Miller, Ingersoll slab, 42"x36"x9'.....	1,750.
Oil separator, Curtis 1 bu.....	100.
Planer, 30x30x8 Gray, 1 head.....	600.
Planer, 32x32x8 Pond, 1 head.....	750.
Planer, 36x36x8 Cincinnati, 2 heads.....	1,250.
Press, No. 21 Holden o. b. i., 3700 lbs., 24" stroke.....	350.
Press, No. 3 Robinson o. b. i., 4300 lbs., 2" stroke.....	450.
Press, No. 6 R. & K. o. b. i., 5500 lbs., 2" stroke.....	525.
Screw machine, No. 1 W. & S., complete, (6) each.....	125.
Screw machine, P. & W. 1x4, complete.....	150.
Shaper, 7" Rhodes horizontal.....	150.
Shaper, 34" Rhodes vertical.....	150.
Turret lathe, 24" Steinlee, 54" hole, side carriage.....	700.

USED AND REBUILT MACHINERY

FOR SALE BY

Clark Machinery Co.,

1235 St. Clair Ave.,

Cleveland, O.

DIE SINKER.

Jackson die sinker, with vertical milling spindle and slotting attach..\$650.00

FOR SALE BY

Marr-Galbreath Machinery Co.,

58 Water St., Pittsburgh, Pa.

Air compressor, 12 cu. ft. Natl. belt.
Air compressor, 10x10 lng.-Rand.
Arbor presses, Nos. 0, 1, 2 & 3.
Bolt cutter, 14" Morgan, double hd.
Bolt cutter, 14" Acme, triple head.
Boring mill, 24" Bullard, side hd. m.d.
Boring mill, 54" Bement-M., 2 hds.
Boring machine, Rockford No. 2 horizontal, 34" bar.
Derrick, steel, stiff lg. 15-ton, 60' boom.
Die sinker, Jackson, 45" x13".
Drills, 36" Barnes, b. g., p. f.
Drill, 24" Cin., b. g., p. f. t. a., m. d.
Drill, 32" Cincinnati, b. g. p. f., m. d.
Forging mach., 3" Acme, steel, m. d.
Forging and rivet header, 1" Ajax.
Gear and pinion cutter, No. 3 Sloan & Chace.
Grinder, No. 1 Norton univ. t. & c.
Grinder, No. 2 Woods, univ. t. & c. m. d.
Grinder, No. 18-D Rowbottom.
Grinder, No. 24 Landis, 16" x48".
Grinder, No. 60 Heald, 19" arm.
Grinder, surface, No. 2 B & S., m. d.
Hack saw, Atkins, cap. 8" x8".
Hack saws, No. 5 Marvel, 6" x6".
Hack saw, 12x15" Racine, g.b., m. d.
Hammer, 2500 lb. Chbg., s. f. steam.
Hammer, 8000 lb. Chbg. dbl. frame.
Hammers, stm. s. f. 600, 1100, 1500 lbs.
Hammers, 40 lb. and 80 lb. Bradley.
Hammer, 250 Chbg. board drop.
Hammer, drop, 100 lb. Toledo.
Keyseater, No. 2 Davis.
Keyway cutter, 24" Morton, cap. 24".
Lathe, 6" x24" Wade, bench.
Lathe, 9" Hardinge, turret, bench.
Lathe, 8" x3" South Bend, collets.
Lathe, 15" x6" South Bend.
Lathe, 16" x10" Monarch g. h., a. c. mtr.
Lathe, 18" x6" Hendey, q. c. g., t. a.
Lathe, 18" x8" Mueller, q. c. g.
Lathe, 18" x8" Cisco, q. c. g.
Lathe, 18" x9" Lehman, q. c. g. t. a.
Lathe, 18" x10" Bradford q. c. g. t. a.
Lathe, 18" x12" Lodge & Shipley q. c. g., t. a.
Lathe, 24" x12" L. & S., chuck q. c. g.
Lathe, 24" x14" Porter, plain change.
Lathe, 24" x10" Putnam, taper attach.
Lathe, 30" x16" Lodge & S., q. c. g.
Lathe, 36" x64" Bridgeford gum boring m. d.
Lathe, 54" x24" H. S. & G., q. c. g., m. d.
Miller, vertical "C" Becker, s. p. d.
Miller, vert. No. 4-B Becker, for m. d.

Miller, No. 3-Bhvy. B. & S. pl. s. p. d.
Miller, No. 3-B Milwaukee, s. p. d.
Miller, No. 0 Kemp Smith univ.
Miller, duplex Knight, table 84" x32".
Motor, 2 h. p., 3/60/220-1150 & 1725 rev.
Motor, 3 h. p. 1/60/110-220/1730 rev.
Motor, 10 h. p. C. W. 3/60/220/1200.
Motor, 7 1/2 h. p. West. 3/60/440/1200.
Motor, 1 h. p. West. 3/60/440/1200.
Motor, 15 h. p., 220 v. d. c., 300/1200 rev.
Motors, 20 & 50 h. p., 3/60/220/900.
Oil separators, 4 & 14 bu. cap.
Pipe machine, 4" Williams, m. d.
Pipe machine, 6" Jarecki, s. p. d.
Planer, 20" x16" x3", 1 head.
Planer, 36" x36" x8" L. & D., 2-heads.
Press, No. 1 Toledo, o. b. i. plain.
Press, No. 52 Ferracute, punch, m. d.
Press, No. 19 1/2 Bliss, o. b. i., a. c. motor, new.
Presses, No. 87 Niagara, screw.
Punch, 30" thrt., 1" x1" m. d., s. e.
Punch, 17" thrt., 1" x1" A. J., m. d.
Punch & shr., 12" thrt., 1 1/4" x1 1/4" A. J.
Punch & shear, 17" throat 1x1"; arch jaw, m. d.
Punch & shear 24" throat, e. f., Cleveland a. j., m. d.
Punch and shear, s. e. 6" thrt. x1 1/2".
Punch, coping, steel plate, 13" thrt. 36" die space, 2 holes 1" x1 1/2", m. d.
Radial drill, 2 1/2" Fosdick, t. a.
Radial drill, 3" Dreses-Mueller.
Radial drill, 3" Cin-Bickford, g. b. m. d.
Riveter, Allen jaw, 36" cap. 1 1/2".
Riveter, 1" Shuster rotary, belt.
Saw, Burke, 12" blade, capacity.
Screw mach., 16" P. & W. pl., w. f.
Screw machine, automatic, 1 1/2" x18" Cleveland "B".
Shaper, 7" Rhodes, vise.
Shaper, 6" Pratt & Whitney.
Shaper, 16" Am., b. g., crank.
Shaper, 16" Barker, b. g., crank.
Shaper, 26" Smith & Mills, b. g., cr.
Shaper, 24" Jungst., b. g., crank.
Shaper, 24" Niles-Bement-Pond, cr.
Shear, rotary, Quickwork 4", 36" throat, with 60" circl. attachment, motor, 3 ph., 60 cy. 220 v.
Shear, rotary, 12" thrt., cap. 22 ga.
Shear, rotary bevel, Lennox 4" m. d.
Turbo compress., Spencer 5400 c. f. m.
Turret lathe, 13" Gisholt, 24" h. s.
Turret lathe, 28" Gisholt, 24" h. s., t. a.
Turret lathe, 2" x24" J. & L., s. p. d.
Turret lathe, 18" W. & S. friction hd.

USED AND REBUILT MACHINERY

FOR SALE BY

Mid-West Machine Tool & Supply Co.,

Davenport, Iowa

Automatics, full, No. 2, No. 0 and No. 00 Brown & Sharpe.
Grinders, No. 10 Brown & Sharpe.
Gear cutter, 4" Waltham, (new).
Grinder, Norton 10x36.
Grinders, surface, No. 22, Heald.

Hobber, Nos. 3, 12-B & C, 4 Adams.
Miller, No. 13-B B. & S., production.
Miller, No. 0Y Brown & Sharpe.
Miller, No. 3 Garvin duplex, 60" table feed (new).
Radial, 4' American sensitive.

Partial list; send us your inquiries.

FOR SALE BY

The Shartle Machine Co., - 359-69 Dublin Ave., Columbus, Ohio

BORING MILLS.

42" Bullard, 2 heads, excellent condition, complete.....\$ 850.
36" Brown & Sharpe plain, for boring wheels and other plain work.... 385.

LATHE.

26" Cleveland heavy duty, geared head, practically new..... 650.

PLANERS.

32"x32"x8' Gray, single head, complete..... 550.

Niles-Bement-Pond, 72" between housing, 52" under cross rail, 12' table, 20' bed, arranged for motor drive, practically new..... 2,500.

FOR SALE BY

Reliance Machinery Sales Company

1405 Brighton Road,

N. S. Pittsburgh, Pa.

Automatics, Nos. 52 & 53 Acme.
Bolt cutter, 1/2" Acme, class "A," 2-sp.
Bolt cutter, 1 1/2" Acme, double head.
Bolt cutter, 2 1/2" Acme, single head.
Boring mill, No. 44 D. & H., floor type, 3 1/2" bar.
Boring mill, Niles horiz., 4 1/2" bar.
Boring mill, 42" Bullard, 2 heads.
Bulldozer, No. 4 Williams & White.
Broach, No. 3 LaPointe.
Buffers, 10 h. p. 220-3-60, 3600 r.p.m.
Cutting-off machine, 6" Hurlburt-R.
Drill, 25" Weigel, sliding head.
Drill, 36" Snyder, sliding head.
Gear cutter, 40"x9" G. & E., s. p. d.
Gear cutter, No. 13 Brown & Sharpe.
Grinder, 5 h. p. U. S., 220-3-60.
Grinder, Oliver drill, 1/2" cap., m. d.
Grinders, Nos. 11 & 12 B. & S. pl.
Grinder, 12"x24" Modern plain.
Grinder, No. 3 Wilmarth & M. sur.
Grinder, No. 3 Brown & S. univ.
Grinder, No. 1 Norton univ. cutter.
Grinder, No. 2 Woods universal.
Grinder, No. 2 Gardner disc, m. d.
Grinder, No. 16 Besly, double disc.
Grinder, 14" Pratt & Whitney, vert.
Hammer, 80 lb. Bradley cush. helve.
Hammer, 300 lb. Bradley upright.
Lathes No. 3 Hardinge Precision (3).
Lathe, 12"x 6" Seneca Falls, q. c. g.
Lathe, 12"x10" Davis tool rm., q. c. g.
Lathe, 14"-28" Fay & Scott gap.
Lathe, 16"x6" Hendey, g. h. m. d.

Lathe, 18"x8" American, late type.
Lathe, 18"x10" W.-B., g. h., s. p. d.
Lathe, 24"x12" Boye & Emmes, q. c. g.
Lathe, 30"x12" Boye & Emmes, q. c. g.
Miller, No. 3 Kempsmith plain, v. a.
Miller, No. 4 Hendey plain, s. p. d.
Pipe machine, 1/2" to 2" Williams.
Pipe mche., Jarecki 1 1/2" to 6", m. d.
Pipe mche., E., C. & B., 2 1/2" to 8".
Pipe machine, Merrill, 2 1/2" to 12".
Press, No. 87 Niagara screw press.
Press, No. 2 Adriance o. b. i., 3 1/2" str.
Press, No. 64 Toledo o. b. i., m. d.
Press, 30-ton Lucas forcing.
Press, Ferracute DD2, o. b. i., cam.
Press, No. 16 Bliss horning.
Press, No. 54 Toledo trimming, m. d.
Press, No. 744 Bliss trimming, m. d.
Planer, 24"x24"x6" Powell, 1 head.
Planer, 30"x30"x8" Powell, 1 head.
Planer, 33"x33"x12" Cincinnati, 2 hds.
Planer, 48"x48"x12" Betts, 3 heads.
Punch, Wickes, 48" thrt., cap. 1 1/2"x1".
Radial drill, 4' Mueller plain, (2).
Saw, Racine high speed, 6"x6".
Saw, 14" American metal swing m. d.
Separator, Dings magnetic, b. d.
Shaper, 20" Smith & Mills b. g. cr.
Shaper, 20" Milwaukee, b. g. crank.
Shaper, 42" Cincinnati, b. g. crank.
Shaper, 24" Potter-Johnson crk. m. d.
Slotter, 15"-18" Dill, m. d.
Tapper, 1/2" Webster & Perks, 1-spdl.
Thread roller, No. 119 Bliss.

Our warehouse is full of bargains. What have you for sale?

USED AND REBUILT MACHINERY

FOR SALE BY

Tranter Manufacturing Co., - 105 Water St., Pittsburgh, Pa.

Blower, U. S. electric for cleaning motors new.....	\$29.
Drills, electric, $\frac{1}{2}$ " U. S., 110 v., new, (2), each.....	27.50
Drill, electric, $\frac{5}{16}$ " U. S., 110 v., new.....	40.
Drill, portable electric $\frac{1}{4}$ ", 220 v., 3 ph., 60 cy.....	90.
Drill, Silver 19", post and c. s., new.....	80.
Forge and anvil, Champion No. 31, new, (2), each.....	15.
Grinder, 8" U. S. electric bench, 110 v., new.....	80.
Grinder and buffer, Clizbe No. 10-A.....	20.
Grinder, Mummert Dixon, oilstone and c. s.....	75.
Grinder and twist drill attach., Wilmarth & Morman, J.B.....	70.

FOR SALE BY

**Wm. C. Johnson & Sons Machinery Co.,
1211-1223 N. 12th St., St. Louis, Mo.**

HAMMERS.

No. 5-B 500-lb. Nazel motor-driven.	60 lb. Bradley helve.
2000 lb. Niles steam.	

LATHES.

60"x12' New Haven turning lathe.	18"x 8' LeBlond, q. c. g.
26"x12' Ffield, heavy pattern.	15"x10' Ciscio, q. c. g.
26"x12' Wickes, taper attachment.	14"x 8' Flather, q. c. g.
24"x10' LeBlond, q. c. g.	Fitchburg Lo-Swing, 12' bed.

PLANERS AND SHAPERS.

24"x24"x 6' Powell.	16" Cincinnati shaper.
30"x30"x 8' Cincinnati.	20" Smith & Mills, shaper, b. g.
36"x36"x18' Hamilton, motor drive.	24" Cincinnati shaper, b. g.
42"x42"x12' Powell, 3 heads.	24" Flather shaper, b. g.
36"x36"x12' Cleveland upside.	24" Gould & Eberhardt shaper, b. g.
48"x48"x16' Niles, box table.	

MILLERS.

No. 1 U. S. hand miller.	No. 1 $\frac{1}{2}$ Brown & Sharpe plain.
Hendey, Lincoln type.	No. 1 $\frac{1}{2}$ Rockford plain.
No. 7 Becker, Lincoln type.	36"x30"x8' Ingersoll slab.

DRILLING MACHINES.

3-spindle Allen, h. s.	32" Mechanics.
4-spindle Barr, power feed.	22" W. F. & John Barnes.
4' Drees radial.	30" Champion.
4' Cincinnati Bickford.	

GRINDERS.

10"x15" Sterling universal.	No. 50 Gardner disc, 30" capacity.
14"x36" Landis universal.	No. 6 Besly double disc.
8" Heald rotary, magnetic chuck.	

BORING MILLS.

No. 1 P. & H. horizontal drill.	42" Niles, 2 heads.
No. 3 Niles horizontal borer.	51" Baush, 2 heads, heavy.

SCREW AND TURRET MACHINES.

2"x24" J. & L., geared head.	3"x36" J. & L., geared head.
No. 1 Pratt & Whitney screw mche.	2" Warner & Swasey hollow hex.
No. 6 Warner & Swasey cone head.	

TRAVELING CRANES.

10 ton P. & H. electric.	3 yard jib cranes with guy ropes.
15 Han, spans 14' to 42'.	

MISCELLANEOUS.

Forging mch., 24" Acme, steel bed.	Punch & shear, H. & J., 46" throat.
Forging mch., $\frac{1}{4}$ " Acme, steel bed.	Rotary planer, 48".
Furnaces, cyanide hardening.	Shear, Lennox, rotary bevel.
Presses, Lourie hydraulic, 20 & 30 ton	Slotter, 13" Niles.
Punch, horizontal, 1" in 1".	Swager, No. 1 Dayton.
Punch & shear, Cleveland 42" throat.	

USED AND REBUILT MACHINERY

FOR SALE BY

Taylor-Hall Welding Corporation, 3 May St., Worcester, Mass.

BUTT AND SPOT WELDERS

Guaranteed to be in perfect condition.

Thomson 10-A-7 butt welder.
Thomson No. 3 butt welder.
Thomson 2-C butt welder.
Thomson 2-A butt welder.

Thomson 21 automatic butt welder.
Thomson 40-A vert. butt welder.
Thomson 20-A vert. butt welder.
Thomson 10-A vert. butt welder.

FOR SALE BY

Foster Machinery Company, 10203 Quincy Ave., Cleveland, O.

SHEARS.

12'x14 ga. Loy & Nawrath.
50"x4" Bertsch, 15" throat.

Canton alligator, cap. 1 1/2' sq.
36"x18" gap, foot.

MISCELLANEOUS.

Automatic, No. 24 New Britain.
Band saw, 24" woodworking.
Drill, multiple - spindle Bausch,
No. 3 Morse taper.
Drill, 14" Allen, ball bearing.

Miller, No. 00 Brown & S., hand.
Press, No. 6 Niagara.
Punch, EF Cleveland, 72" thrt., m.d.
Riveter, High Speed 2A.
Upsetter, 3 1/2" Acme.

FOR SALE BY

Miles Machinery Co.,

Saginaw, W. S., Mich.

Automatics, No. 00 Brown & Sharpe
Automatics, 5A & 6A Potter & J.
Brakes, 3'x14 ga. & 8'x18 ga. Chicago
Bulldozer, No. 4 Williams & W.
Bulldozer, No. 7 Ajax.
Compressor, 9"x8" Ingersoll Rand
EK 1.
Compressor, 10"x10" Chicago n.s.b.
Compressor, 830' Union b. d. t.
Drill, multiple, Nos. 12 & 30 Natco.
Drill, radial, 4, 5, 6 & 8' Western.
Drill, rail, No. 11D Moline holehog
Gauge blocks, Set No. 1 Johansson.
Gear hobbess, Nos. 3 & 12 Barber-C.
Gear cutters, 36" & 48" Brown & S.

Grinders, 6"x32", 10"x50" & 14"x72"
Norton.
Grinder, surface, No. 1 Diamond.
Grinder, sur., 14"x40" P. & W. vert.
Grinder, face, 30"x84" Diamond.
Grinder, cylinder, No. 60 Heald.
Hammer, steam, 600 lb. N. B. P.
Hammer, pneumatic, No. 2B Nazel.
Keyseaters, Nos. 0, 4 & 6A M. & M.
Lathes, 12x6, 14x8 & 16x6 Hendey.
Lathe, 20"x3" LeBlond.
Lathe, 36"x18" Bridgeford.
Lathes, turret, 3A & 3A Warner & S.
Mills, horiz., Nos. 3A & 3 1/2 Univ.
Millers, Nos. 2, 3, 5 Cincinnati.

FOR SALE BY

Brown Machinery Co.,

2323 N. 9th St., St. Louis, Mo.

Blowers, Nos. 3, 7 and 9 Sturtevant;
Nos. 4 and 2 Root.
Buffer, Hisey 3 hp., 3-ph., 220 v.
Drills, 20" C-O and Champion; 22"
and 25" Barnes; 24" Cincinnati.
Drills, radial, 2 1/2" American and
C-O; 3 1/2" Fordick.
Drills, hor. radial, Nos. 2 & 3 Barnes.
Grinders, emery, St. Louis & W.;
large stock new at 50¢ disc.
Grinders, disc, No. 6 Bealy and 14
Gardner.
Grinders, drill, W. & M.; American.
Grinders, plain, 10x36" Norton;
8x36" B. & S.
Grinders, universal, Nos. 3 Ohio
and 12 B. & S.
Hammer, helve, 40 lb. Bradley.
Lathes, No. 5A Potter & Johnston.

Lathes, 14" C-J; 16" Monarch; 18"
Monarch; Lodge & Shipley; Fay
& Scott; 20" L. & S.; 24" F. & S.;
26" Whitcomb-B.; 36" American.
Lathes, turret, 16" Gisholt, Fulton,
Omar, Foster, J. & L.
Millers, No. 4 Hendey and No. 3B
Owen, plain; No. 3 Cincinnati univ.
Planers, 30" Whitcomb; 60" Niles.
Presses, No. 5 S. & P. grd.; L. & J.
o. b. i., No. 2 S. & P.
Punch and shears, No. 6 L. & A.
12" thrt.; No. 17 W.-W.
Riveter, 1 1/2" Adt.
Shapers, 24" Amer. b.g.; 20" D. & E.
Shears, rotary splitting, No. 134
Marshalltown 4' thrt.; 4" cap.;
No. 13 Pettingell.

And many others. Write for list 130.

USED AND REBUILT MACHINERY

FOR SALE BY

The Reeve-Fritts Co., 558-560 W. Washington Blvd., Chicago, Ill.

Centering machine, 4" Whiton.
Drill, 29" C. & O. plain, radial.
Drill, 20" Barnes, all grd.
Drill, 20" Champion b. g., p. f.
Grinder, No. 3 Oakley, surface.
Grinder, Heco surface, 16"x24" table.
Grinder, 6"x15" Ott plain.
Gear cutter, No. 98 G. & E. spur & b.
Lathe, No. 4 Elgin preci., with bench
Lathe, No. 4 Cataract precision.
Lathe, 10"x5" P. & W., tool makers.
Lathe, 11"x5" Star, c. r.
Lathe, 11"x5" Barnes, c. r.
Lathe, 12"x5" Hendy q. c. g.
Lathe, 16"x6" South Bend, q. c. g.

Lathe, 16"x8" Flather, q. c. g.
Lathe, 18"x10" Barnes, c. r.
Lathe, 24"x12" Peerless, c. r.
Miller, No. 2 Rockford, plain.
Miller, No. 2 Ford-Smith universal.
Miller, Briggs Mfg., 16, 28, 42" fds.
Motors, 1, 1 1/2, 5, 7 1/2 h. p., d. c.
Planer, 24"x24"x6" Rockford.
Press, No. 2 V. & O., o. b. i.
Press, No. 3-P Am. Can solid bk.
Press, No. 1 Massillon trim.
Shaper, 17" Economic crank.
Shaper 7" Rhodes crank.
Shop saw, 6x6 Racine h. s.
Shop saw, 6x6 Peerless h. s.

FOR SALE BY

Norton-Broadway Mch. Co., Sixth & Baymiller Sts., Cincinnati, O.

BORING MILLS.

36" Niles, 2 heads.
42" Bullard, 2 heads.
52" Bickford, 1 head.
3" Lucas horizontal cone drive.

36" American, 2 heads.
50" Niles, 2 heads.
28" Rochester horizontal.
6" Gray horizontal.

LATHES.

18"x8" Lodge & Shipley, q. c.
20"x10" Hendey, q. c.
24"/28"x48"x14" McCabe, 2 spindle.
3-20"x5" American, q. c.

27"x16" Lodge & Shipley, q. c.
32"x16" Wickes.
38"x20" Bradford.
42"x24" Bradford.

MILLING MACHINES.

No. 2B Brown & Sharpe, heavy.
No. 2 Brown & Sharpe, universal.
No. 4 Brown & Sharpe, universal.
No. 13 Brown & Sharpe plain.

No. 4 Brown & Sharpe universal.
No. 4 Cincinnati universal.
No. 4 LeBlond plain.
P. & W. and Brown & S. hand.

PRESSES AND SHEARS.

No. 3 Toledo inclinable.
No. 183 Stiles Parker inclinable.
No. 68 N Bliss, inclinable.
No. 1 Long & A. punch and shear.
No. 3 Hilles & Jones punch and shear, double end.
4" Long & Allstatter gate shear.

No. 4 Toledo inclinable.
No. 19-C Bliss inclinable.
No. 17 Williams-White p. & s.
No. 723 Toledo incl.
No. 6-A Willard inclinable.
No. 57 Toledo.
No. 165 Toledo.

GRINDERS.

18"x36" Norton cylindrical.
Nos. 11 & 12 Brown & Sharpe.
Herald cylinder (2).
Bath & Walker surface.

16"x72" Brown & Sharpe.
No. 14 Pratt & Whitney vertical.
No. 10-A Bryant.
6"x20" Webster & Perks.

PLANERS.

24"x 8" Pond, 2 heads.
30"x16" Gray, 2 heads.
30"x 8" Gray, 2 heads.

38"x12" Gray, 2 heads.
42"x18" American, 2 heads.

SHAPERS.

15" Ohio plain, crank.
16" Queen City, b. g. crank.
20" Smith & Mills, single pulley.

20" and 24" Hendey.
24" Queen City, single pulley.
25" Smith & Mills, crank.

MISCELLANEOUS.

No. 3 Ajax Bulldozers, with motor.
Four spindle Gridley and Acme automatics.
2 1/2" and 3 1/2" single spindle Gridley automatic.

5' American semi-univ. radial.
400 ton Caldwell wheel press.
Acme bolt cutter, 2 spindle.
Peerless and Racine power saws.
Barnes four spindle auto. drill.

More than 300 good machine tools in stock.

USED AND REBUILT MACHINERY

FOR SALE BY

Allegheny Gear Co.,	1013 Empire Bldg., Pittsburgh, Pa.
Broaching mche., No. 3 LaPointe.	Grinder, No. 20 Bryant, deep hole.
Drill, 2-D Colburn, 24" swing 2 1/2".	Grinder, Landis 12"x66" plain whls.
Drill, radial, Reed-Prentice, arm 5'.	Grinder, No. 70 Heald internal.
Gear cutter, No. 3A Cincinnati.	Hoists, portable, crane, 2-ton.
Gear shapers, "Fellows" No. 62.	Lathe, 32"x14" Bridgeford, motor dr.
Gear gents bevel, Gleason 11" & 15".	Planer, Bickett 36"x36"x12", mtr. dr.

FOR SALE BY

E. L. Klauber Machinery Co.,	320 South Third St., St. Louis, Mo.
Drill, 28" Prentice, b. g., p. f., sl. hd.	Lathe, 16x6 Prentice p. c. g., s. b. g.
Drill, radial, 42" Bickford.	Lathe, 22x14 Bradford, q.c.g., d.b.g.
Drills, 3-spindle Dwight slate.	Miller, No. 1 1/2 Knight.
Drill press, 34" Barnes, b.g., s.h.t.a.	Millers, hand, No. 0 Burke.
Gear cutter, 32" Whiton.	Pinion and wheel cutter, Stark.
Gear miller, automatic, 4" cap.	Planer, 30"x30"x5" American.
Grinders, No. 11 B. & S. plain (2).	Shaper, 14" Steptoe.
Grinder, No. 3 Brown & S. cutter.	Shaper, 24" American, b. g.
Grinders, electric bench, 1/2 h. p. 110 volt a. c.	Shapers, 24" Cincinnati, b. g. (2).
Lathe, bench, Stark, with collets.	Shear, serpentine, Lenox 1/2".
Lathes, 9x14 Porter-Cable.	Tapping machine, No. 6 St. Louis.
Lathes, 13x4 Adams short cut.	Tapping mche., Montgomery frict.
Lathe, 13x6 South Bend.	Turret lathe, No. 3 Bridgeport.
Lathe, 15x6 South Bend.	Turret lathe, No. 7 B. & O., b. g.
	Turret lathe, No. 2 Foster, b. g.

FOR SALE BY

Chas. Molitor Machinery Co., 118-124 S. Clinton St., Chicago, Ill.

MILLERS.

No. 2B Kearney & Trecker univ.	No. 3 Becker vertical.
No. 3 Brown & Sharpe universal.	Beaman & Smith vert. and horiz.
No. 3 Kempsmith universal.	30" Bullard vertical turret.
No. 2 1/2 Rockford univ., sgl. pulley.	2 1/2" Binnse horizontal, boring.
No. 2 Rockford universal.	Large variety of smaller power and hand millers.
No. 2 Rockford plain, single pulley.	

SHAPERS.

24" Rockford geared, crank.	17" Smith & Mills crank (2).
30" Rockford geared, crank.	16" Rockford crank.
20" Columbia geared, crank.	16" Steptoe crank.
20" Smith crank.	16" Barker geared, crank.
20" Smith & Mills geared, crank.	14" Gould & Eberhardt grd. crank.
17" Flather, single pulley t. & l. (2).	12" Steptoe crank.

SCREW MACHINES AND TURRET LATHES.

No. 4 Warner & Swasey universal.	No. 2, 1, 0 B. & S. formers (12).
No. 4 W. & S., b. g., friction hd. (4)	No. 2 Brown & Sharpe semi-auto.
No. 4 Warner & Swasey plain.	No. 0 Brown & Sharpe semi-auto.
No. 2 Warner & Swasey (4).	Large variety Fosters, Acme, V. O.
No. 1 Warner & Swasey.	No. 53 Nat-Acme, motor, att. (5).
No. 0 Brown & Sharpe automatic.	1/2", 1" Cleveland (5).
No. 00 Brown & Sharpe auto. (5).	5-spindle New Britain screw mche.
Single spindle Leland-Gifford (6).	

ROLL CUTTERS AND KEYSEATERS.

2" Acme with lead screws (2).	1/2" Acme.
1 1/2" Landis.	No. 5 Hecker keyseater.
1" Landis.	No. 3 Becker keyseater.
1 1/2" Acme.	No. 2 Davis keyseater, (3).
1" Acme.	Variety of cutters and broaches.

Large stock of lathes, punches, drill presses, tappers, 5', 8', 10' power squaring shears, several hundred Warner & Swasey tools, etc.

USED AND REBUILT MACHINERY

FOR SALE BY

Nelson Machinery Co.,

Grinder, No. 14 Besly.
Hobber, Farwell No. 1 automatic.
Punch press, No. 4 R. & K., o. b. i.
flywheel.

123 N. Pearl St., Green Bay, Wis.

Miller, No. 3 Cincinnati universal.
Punch press, No. 3 Bliss, o. b. i.
flywheel.
Turret lathe, No. 14 Pratt & W.

FOR SALE BY

Davis Machinery Exchange,

1-3-5 So. St. Clair St., Toledo, Ohio

Bolt threader, 1 1/2" Landis, sq. head.
Bolt threaders, 1 1/2" and 2" National,
2 of each size.
Drill, 3-spindle Barnes camel back
all geared.
Drill, 20" Barnes camel back, single
spindle, all geared.
Drill, 6-sp. Nat. Acme horizontal.
Grinder, 10" x 36" Norton.
Grinder, 12" x 36" Modern cylindrical,
self-contained countershaft.
Grinder, No. 3 W. & M. surface.
Jointer, 20" Oliver rd. safety hd.
Lathe, 14" x 6", Walcott, quick change
gear, taper att. 2 chucks.
Lathe, 18" x 8" Greaves-K., q. c. g., ck.
Lathe, 24" x 10" Hendey, q. c. g.
Lathe, 26" x 14" Walcott, qck. chg.
gear, taper att. chuck.
Mill, No. 3 Kemp Smith plain.

Mill, No. 2 Cincinnati Hi Power
plain, s. p. d.
Milling & drill, mch., No. 2 Knight.
Milling & drill, mch., No. 1 Knight.
Mill, No. 1 Kemp, univ., cone pulley
Press, No. 8 Cleveland s. s. flywheel.
Press, No. 9 Cleveland o. b. i., fly-
wheel, 4 1/2" stroke.
Press, punching No. 34 Toledo s. b.,
geared.
Shaper, 24" Rockford crank, b. g.
Shaper, 28" Ohio crank, b. g.
Slitter, gang, No. 513 Toledo, 36" x 18
gauge.
Turret lathe, No. 3 Foster, g. f. h.
Turret lathe, No. 7 Foster.
Turret lathe, No. 4 Warner & S.,
geared friction head, power feed.
Welder, Agnew spot, 60 cycle, 220 v.
Woodworker, No. 103 Crescent univ.

FOR SALE BY

Randle Machinery Co.,

1733 Powers St., Cincinnati, Ohio

Bending roll, 8" Beloit.
Bending rolls, 8" x 5/16" Bertsch.
Bending rolls, 10" x 1/2" plate.
Bolt cutters, 1 1/2", 2" Acme.
Bolt cutters, 1 1/2", 2" Landis.
Bolt cutter, 1 1/2", No. 732 G. T. & D.
Bolt cutter, 4" Acme, m. d.
Boring mill, 42" Bullard.
Boring mill, 51" Niles.
Boring mill, 72" Niles.
Boring mill, 84" Sellers.
Brake, 8" x 16ga. Robinson hand, pwr.
Brake, 8" x 10 ga. Robinson, m. d.
Brake, 6" x 10 ga. Pexto, m. d.
Grinder, No. 41 Bexco, m. d.
Grinder, No. 14 Besly.
Hack saw, 6x6, and 12x16 Peerless.
Hack saw, 9x9 Acme.
Keyseater, No. 2 Davis.
Keyseater, No. 2 Mitts & Merrill.
Lathe, 16" x 8" American, q. c.
Lathe, 16" x 8" Bradford, l. c.
Lathe, 16" x 6" Monarch, q. c.
Lathe, 17" x 16" Sidney q. c.
Lathe, 18" x 10" Morris q. c.
Lathe, 26" x 12" Schumacher-B., l. c.
Lathe, 24" x 10" Lodge-Shipley q. c.
Lathe, 24" x 14" LeBlond, q. c.
Lathe, 27" x 12" LeBlond, q. c.
Lathe, 30" x 32" Pond, l. c.

Lathe, 23" x 14" Sidney, q. c.
Lathe, 36" x 15" American, q. c.
Lathe, 36" x 45" Niles l. c.
Lathe, 42" x 24" Bradford l. c.
Miller, No. 1B Brown & Sharpe.
Miller, No. 2 LeBlond plain.
Miller, No. 2 Cincinnati universal.
Planer, 26" x 26" x 12" W.-B., 2 heads.
Planer, 32" x 32" x 14" Gray, 2 heads.
Planer, 32" x 32" x 16" Gray, 2 heads.
Planer, 42" x 42" x 20" Bickett, 2 heads.
Pipe machine, 6" Saunders, belt dr.
Pipe machine, 2" Saunders, belt dr.
Pipe machine, 8" E.-C.-B., belt dr.
Pipe machine, 8" Landis, m. d.
Radial drill, 3" Morris plain.
Radial drill, 4" Dress plain.
Radial, drill 4" Bickett plain.
Shear, No. 51 Beloit comb. m. d.
Shaper, 14", 18" Steptoe plain, crk.
Shaper, 16" new Queen City b. g.
Shaper, 20" Kelly plain.
Shaper, 24" Cincinnati Std., Climax.
Shaper, 28" new Queen City b. g.
Surface plates, 17x28, ea. \$30.
Surface plates, 14x42, ea. \$50.
Wheel presses, 200 ton N.-B.-P.,
48" x 28", m. d.
Wheel press, 300 ton Thomas, b. d.
Wheel press, 400 ton Caldwell, b. d.

USED AND REBUILT MACHINERY

FOR SALE BY

Carlson Machinery Co., Inc.,

Boring mill, No. 2 Rockford horiz.
Boring mill, No. 3-A universal hor.
Centering machine, 4" Pratt & W.
Drill, 1" Sipp h.s.b.b., 8" overhang.
Grinder, 10x20 Landis universal.
Grinder, No. 2 Oakley univ., t. & c.
Hobber, 24" Schuchardt & Schutte.
Lathe, 7"x30" Dalton bench.
Lathe, 13"x5" Sheppard.
Lathe, 14"x6" Hendey, geared head,
taper, draw in attach. & collets.
Lathe, 16"x8" Canedy-Otto.
Lathe, 18"x6" Lodge & Shipley.
Miller, No. 1 Cincinnati plain.

Davenport, Iowa

Miller, No. 1 Kempmith univ., div.
head.
Miller, No. 1 1/2 Cincinnati univ.
Miller, No. 2-B B. & S. pl., a. p. d.
Miller, No. 3 Ohio plain.
Miller, No. 6 Whitney hand.
Press, No. 4 Toledo o. b. i.
Press, No. 5 Toledo o. b. i.
Riveter, 1/2" Cincinnati spinning.
Turret lathe No. 1 Pratt & W.
Turret lathe, 3x36 Jones & Lamson.
Turret lathe, No. 4 W. & S. pl.
Turret lathe, No. 6 Warner & S.,
power feed to carriage and turret.

FOR SALE BY

Syracuse Supply Company. 314 W. Fayette St., Syracuse, N. Y.

Guaranteed NEW MACHINES in original crates at prices below list:

Cut-off mchs., No. 3 Modern (2).
Drill, No. 38 Demco, with power
feed.
Pipe machine, No. 70 Forbes.

Drill presses, Buffalo 21", back
geared, power feed (6).
Shaper, 20" Whipp, back geared.
Straightener, No. 24 Corey.

Exceptional values in USED TOOLS:

Bending machine, Champion.
Drill, Avey No. 2, 3-spindle, 18"
overhang, motor drive, with pump
and piping.
Drill press, 22" Prentice, rebuilt.
Grinder, 24" Safety Emery Wheel
Co. snag grinder.
Grinder, Blount 19x14 wet tool, m. d.
Lathe, 20"x12" Reed.
Lathe, 12"x4" Hendey, q. c. g.
Lathe, 8x60 Fitchburg lo-swing.
Miller, No. 5 Becker vertical.
Millers, Wisconsin hand, (3).

Planer, 30"x30"x16' L. W. Pond.
Radial, 5' Pond.
Radials, 5' Dreeses, single pulley
drive, gear box, (2).
Screw machine, No. 24 Garvin.
Shaper and slotter, No. 1 Rhodes.
Thread miller, No. 12 Lees Bradner.
Tilted turret, No. 6 Wood.
Turret lathes, No. 4 Foster, (2).
Turret lathe, No. 3 Cincinnati Acme.
Turret lathe, 24x26 Pratt & Whitney.
Turret lathe, 21" Gisholt.
Turret lathe, 24" Steinle.

FOR SALE BY

Bennett Machinery Co.,

30 Church St., New York City

Boring mill, 51" Bridgeport, 2 hds.
Boring mill, 42" Bullard, 2 hds.
Boring mche., 2 1/2" Fitch, knee type
Drill, mult. 6-sp. Baush, in circle.
Drill press, 25" Snyder, tapping.
Hammers, 50 lb. & 25 lb. power trip.
Lathe, 26/40"x18" McCabe, dbl. spdl.
Lathe, 26/48"x14" McCabe, dbl. sp.
Lathe, 40"x13" Putnam, tr. grd., cone
Lathe, 28"x12" Boye & E., q. c. g., taper.
Lathe, 26"x14" Rahn-Carpenter cone.
Lathe, 24/33"x14" Pond, belt.
Lathe, 20"x8" Whitcomb-B., q. c. g.
Lathe, 21"x10" Sidney, new.
Lathe, 19"x8" LeBlond, q. c. g., taper.
Lathe, 18"x10" Sidney, new.
Lathe, 18"x10" L. & S. q. c. g., taper.
Lathe, 18"x10" Flather, q. c. g., cone.
Lathe, 18"x8" Hendey, q. c. g., taper.

Miller, No. 3 Kempsmith plain.
Miller, No. 24 LeBlond, plain.
Miller, No. 1-A Milwaukee mfg., grd.
Miller, Model C Becker, vertical.
Miller, No. 5B Becker.
Pipe machine, 8" E. C. & B., belt.
Pipe machine, 8" Jarecki, motor.
Pipe machine, 4" E. C. & B., belt.
Pipe mche., 4" Curtis & Curtis, mtr.
Planer, 30"x30"x10" Cincinnati, 2hds.
Punch, 24" L. & A. No. 4 s. e.
Radial 34" Mueller, gear box tap.
Radial, 24" Mueller, cone dr., tap.
Radial sensitive, 3" American, tap.
Saw, cold 22" blade Gleim, 6" cap.
Shaper, 21" American, belt drive.
Shaper, 18" Ohio, single geared.
Shaper, 16" Stockbridge, belt.

Send for Complete Stock List.

USED AND REBUILT MACHINERY

FOR SALE BY

McMullen Machinery Company.

Grand Rapids, Mich.

Automatics, 1" Cleveland, (2).
Cold Saw, No. 4 Greenfield.
Drill, 20" Wisconsin all geared.
Furnace, No. 200 Stewart, Crucible.
Grinder, No. 6-A Bryant.
Grinder, Wisconsin universal.

Lathe, 24x26 Greenlee flat turret.
Pipe machine, 6" Merrill.
Press, No. 3 Manville d. a.
Press, No. 54 Consolidated.
Welders, No. 10 Thomson, butt.

FOR SALE BY

W. P. Little Co., West 9th & Front Sts., Cleveland, O.

DRILL PRESSES.

No. 25 Foote-Burt heavy duty. Type F Baker heavy duty.

PLANERS.

26"x26"x8' Gray, one head. 32"x32"x14' Pond, two heads.

SCREW HEAD SHAVING MACHINES.

2 No. 2 Garvin screw head shaving machines, with screw head cross slides.

SPLITTING SHEARS.

1" capacity Columbus 1" capacity No. 22 Rock River.

MISCELLANEOUS.

Keyseater, No. 2 Baker.
2"x24" J. & L. flat turret lathe.
18" Cincinnati b. g. miller.
Sprue cutter, 1" cap. Tessmer.

32"x40" Hoeval sand blast tumb. bl.
E G-22 Ferracute geared arch press.
28" Cin. semi-automatic face mill.
Straightening roll, 42", 7 roll.

150 other tools in stock. Send us your inquiries.

FOR SALE BY

McDonald Machinery Co.,

1531-33 N. Broadway, St. Louis, Mo.

Arbor presses, Eames No. 6.
Baling press, Champion sheet metal.
Bolt threader, Acme 3 hds. 1 1/2" cap.
Chain hoists, Yale & Towne 1 1/2 & 2-ton
Demagnetizer, Walker.
Drill, Baush 18-spindle.
Drills, Baker.
Drills, Leland-G1-sp. h.s., b.b. floor.
Drills, H. & W., Kokomo 1-spdl.,
Sipp 1 & 2-spdl., h. s., b. b.
Drills, 20", 24", 26 & 28" b. g., & tap.
Furnace, Holcroft 92 k.w. annealing.
Grinder, Heald No. 60 cylinder.
Grinders, modern internal; LaSalle
No. 2 surface; Blount 30", wet (3).
Grinders, St. Louis No. 9.
Hack saws, 4x4, 6x6 & 2 Racine Jrs;
Atkins 4x4"; Atkins 5x8 h. s.,
Marvel No. 2, Racine 6x6, h. s.
Hammer, Bement-Niles 1100 lb. st.
Lathes, Schumacher & Boye, 42"x16"
q. c. g.; South Bend 24"x14"; South
Bend 21"x12" q. c. g.; Davis 22"x10";
Whitcomb-Blaisdell 22"x8" q. c. g.
American 20"x9"; Monarch 16"x8";
Porter-McLeod 16"x8"; all q. c. g.;
40 other assorted sizes.
Milling machines, Kempsmith No. 2;
Ohio No. 20 plain; Becker "SD"
vertical, rotary table, 17200 lbs.;
American No. 1 1/2 universal; B. & S.
No. 3 vert., s. p. d., with rotary tbl.;
Ohio 34; LeBlond No. 3-H plain;

Brown & S. No. 3 pl.; Becker No.
4-B vert; B. & S. No. 3-B plain,
s. p. d.; Kempsmith No. 3 univer-
sal; No. 1 Kempsmith plain.
Pipe machine, Curtis 3", motor dr.;
Merrill 4" belt drive; B. & K. 8".
Planers, Gray 28"x28"x6", 1 head;
Cincinnati 36"x36"x18" 2 heads.
Punches, W. & W. No. 17 punch and
shear.
Punch presses, Swaine No. 29 o. b. i.
Willard No. 4-A o. b. i., Bliss No.
19 o. b. i., (2), Federal No. 1 & 2.
Pyrometer, Thwing elec., with rec.
Rivet spinner, Grant.
Rolls, Badger 50" Pyramid power
rolls.
Screw machine, Gridley 1-spdl. 2 1/2"
auto.; Cleveland 1 1/2" auto.; W. & S.
No. 2 hand; P. & W. No. 2 1/2 hand;
Foster No. 3 hand; Woods No. 2
tilted turret head; Bardons & O.
No. 7; National-A. No. 52 auto.,
4-sp., m. d. B. & S. No. 60 auto.
Shapers, Whipp 12", 16" & 20"; Cinti.
20", b. g.; Ohio 20"; Ohio 16";
American 16" b. g.; S. M. 16";
Steptoe 14" Barker 24" b. g.;
American 24" b. g., Queen City
24" b. g., Barker 18" b. g.
Shears, 60" thrt. rotary slitting, (2).
Welders, butt, Federal, 1" rds.

Surplus Plant Equipment

Many Modern Machines. Some practically as good as new. All Motor Driven Equipment 220 volt D. C. Communicate with our nearest office for prices.

All items at Ridgway, Pa., except those marked "C", "H," and "P" Items "C" at Cincinnati; "H" at Hamilton; and "P" at Philadelphia.

Lathes

13"x5' Blount Speed Lathe, Belt.
28"x30' Pond, motor.
H-37"x12' Pond Time Saver, arr.
for d. c. var. speed motor.
C-28"x12' Boye & E. d. b. g. cone.
P-33"x17' Pond single b. g. cone.
H-36"x18' Pond all geared motor.

Turret Lathes

3"x36" P. & W., belt.
34" Gisholt, motor.

Planers

42"x42"x26' Pond, 4 hds. rev. m. d.
48"x48"x20' Pond, 4 hds. rev. m. d.
48"x48"x27' Pond, 4 hds. rev. m. d.
10"x10"x34' Betts, 4 hds. belted m. d.
H-36"x36"x10' Pond, 3 hds., r. m. d.
H-36"x36"x12' Pond, 4 hds., r. m. d.
H-36"x36"x14' Pond, 2 hds., r. m. d.
H-36"x36"x14' Pond, 4 hds., r. m. d.
H-42"x42"x14' Pond, 4 heads, belted, m. d.
H-60"x60"x20' Pond, 4 hds., r. m. d.
H-42"x18"x20' Pond, Extra Heavy
Frog and Switch, 2 heads, r. m. d.

Upright and Radial Drills

No. 1 Bement Vert. Cotter, Belt.
5' Right Line Full Universal motor.
6' Ridgway Plain, motor.

Millers

Whitney Hand, belt.
No. 3H LeBlond Universal, belt.
No. 4 Cincinnati Universal, motor.
No. 6 Becker-Brainerd Vertical, belt.
6"x132" P. & W. Thrd Miller, Belt.
H-No. 3 Cincinnati Vertical, mtr.

Niles 75-Ton 4-Motor Electric Traveling Crane, 49' span, with 10-Ton Aux. Hoist, 3-60-440 A. C. Motors, practically new, located at LaSalle, Ill.

Also Foundry and Woodworking Equipment

The Niles Tool Works Company

Division Niles-Bement-Pond Company
Hamilton, Ohio

New York, Birmingham, Boston, Chicago, Cincinnati, Cleveland, Detroit, Los Angeles, 454 E. Third St. Philadelphia, Pittsburgh, Rochester, St. Louis, San Francisco, 917 Howard St.

Shapers and Slotters

22" Bement Slotter, motor.
H-16" Stockbridge Shap., b.g., belt.

Emery Wheel Stands

No. 6 Blount Grinder, Belt.
18" Grinder and Polisher, belt.
30" Grindstone Frame, belt.

Gear Cutters

24" Gleason Bevel Planer, belt.
36" No. 4 B. & S. Spur Cutter, belt.

Grinders—Cylindrical and Tool

LeBlond No. 1 Cutter, belt.
No. 2 Sellers Tool, belt.

Horizontal and Vertical Boring Mills

34" Sp. Ridgway Hor., motor.
8" Sp. Betts Horiz., belt.
54" Sp. 80" Bement Horiz., belt.
H-38"-44" P. & W. side head,
belt or motor.
H-44" Niles, with r. h. tur. hd., mtr.

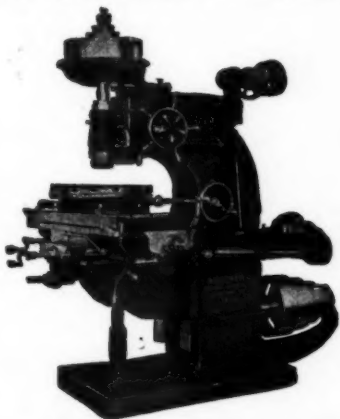
Niles Electric Traveling Cranes

5 ton, 3 motor, 34' 8" span.
5-ton, 3-motor, 33' 7" span.
10-ton, 3-motor, 34' 8" span.
30-ton, 4-motor, 34' 8" span, 5-ton aux.
25-ton, 4-mtr., 71' 11" span, 5-ton aux.
40-ton, 4-mtr., 71' 11" span, 5-ton aux.
2-ton, 2-motor, wall crane, 19' arm.

Miscellaneous

Y & T 3-ton Hand Crane, 35' 6" span
Bement 1100 Lbs. S.F. Stm. Hammer.
4" capacity Espen-Lucas Cold Saw
Williamsport No. 190 Ry. Cut-Off
Saw Belt.
100—Card Day Time Regis. Clocks.
H-1"x18" Cap. 12" Throat, L. & A.
Hor. Punch Motor.
H-185-lb. Motor Driven Air Ham.

**Rebuilt by Manufacturer
Nos. 5C and 6 Becker**



Vertical Milling and Die Sinking Machines

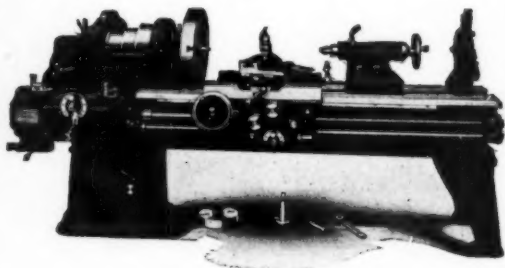
No. 5-C BECKER Late Type Vertical Milling Machine, working surface of table 53"x14", range 54"x16"x18", vertical adjustment of head 8- $\frac{3}{4}$ ", all power feeds but feed of knee, three-step cone for 4" belt, with regular equipment including double friction countershaft. Rebuilt and Guaranteed in First-Class Condition. \$1750.

No. 6 BECKER LATE TYPE VERTICAL MILLING MACHINE, working surface of table 61"x18", range 62"x20"x22", vertical adjustment of head 12", all power feeds, three-step cone for 5" belt, with regular equipment including double friction countershaft.

Rebuilt and Guaranteed in First-Class Condition. \$2750.

Reed-Prentice Corporation
WORCESTER, MASS.

SPECIAL BARGAINS IN



**Our Latest Design being replaced in our
Factory by our CONELESS LATHE.**

18"x 8' 3-Step Cone, Double Back Gear.

18"x10' 3-Step Cone, Double Back Gear.

10"x10' 3-Step Cone, Double Back Gear.

20"x12' 3-Step Cone, Double Back Gear.

24"x10' 3-Step Cone, Double Back Gear.

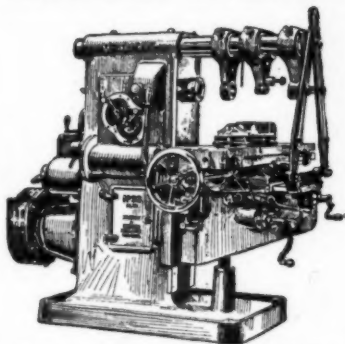
Only in use about six weeks.

Full description and prices upon request

The Boye & Emmes Machine Tool Co.

2245 Spring Grove Ave., Cincinnati, Ohio

LIKE NEW—



**Cost
Much
Less**



Factory Rebuilt Milwaukee Milling Machines

that will satisfy both your Production and Purchasing Departments. Genuine MILWAUKEE MILLERS—rebuilt at the factory. Every machine is completely disassembled, re-scraped, and new parts used wherever needed. They carry the same accuracy guarantee as our *new machines*. Better write today—

THESE ARE STILL AVAILABLE

No. 1 A Manufacturing	No. 2 A Manufacturing
No. 1 B Plain	No. 2 B S Plain
No. 2 A S Mfg. M. I. B.	No. 3 B Universal
(Motor-in-Base)	No. 3 B Vertical
	No. 3 B Plain

SUBJECT TO PRIOR SALE

Address: Rebuilding Department

MILWAUKEE MILLING MACHINES
KEARNEY & TRECKER
CORPORATION

5926 National Ave.,

Milwaukee, Wisconsin

(See Page 3 for K & T New Milling Equipment)

A Few Listings From a Stock of 1500 "Restored" Machines

No. 0 Giddings Lewis Horizontal.
No. 21 Lucas Horizontal.
8" Bar Barrett Horizontal.
7" Bar Newton Horizontal.
10—16" Niles Vertical.
10" Niles Vertical.
72" Niles-B-Pond Vertical R.T.
72" Gisholt Vertical RT.
84" Bullard Vertical RT.
72" Betts Vertical Side Head.
54" Colburn Vertical.
Gridley 4 spindle $\frac{3}{4}$ ", $1\frac{1}{4}$ " $1\frac{3}{4}$ ", $2\frac{1}{4}$ ".
Brown-Sharpes Nos. 0, 00, 1 and 2.
No. 21 Besly Disc Grinder.
Landis Grinder 16x52".
Norton 6"x32", to 18"x96".
Diamond Face 30"x84".
Pratt & Whitney Vertical No. 14
Blanchard No. 16, 26".
Brown & Sharpe Univ. Nos. 1 & 2.
Brown & Sharpe Surface No. 2.
Dresses Plain Radial 4", 5".
American Full Universal 6".
American Triple Geared 4".
Natco Multiple No. 14, No. 32.
Baush Multiple Nos. 2, 3, 4.
Cincinnati-Bickford 5", 6".
Rockford Gang Drill 2, 3, 4.
Barnes Gang Drill 4-spindle.
Warner-Swasey Turret, Nos. 3A, 2A.
Warner-Swasey Screw Mche. No. 4.
Libby Turret 18", 26".
Pratt-Whitney Auto Miller, 5", 12".
Brown-Sharpes Univ. Nos. $1\frac{1}{2}$ ", 3".
Milwaukee Universal No. 3-B.
Cincinnati Vertical Nos. 2, 3, 4.
Cincinnati Plain Nos. 2, 3, 4, 5.
Cincinnati Pl. Intermittent Feed No. 5.
Hendey Plain No. 4-B, No. 3-B.
Cincinnati Universal No. 2, No. 3.
Cincinnati Gear Cutter 36".
B. & S. Gear Cutter, 72", 60", 36".
Pratt-Whitney Gear Cutter, 90", 104".
Gleason Gear Planer, 24", 36".
Gleason Gear Generator 6", $11\frac{1}{2}$ " 18".
Gould & E. Gear Cutter 48", 72".
Stockbridge 16" single geared New.
Stockbridge 16" back geared New.
Stockbridge 20" back geared New.
Stockbridge 24" back geared New.

86"x30" Putnam M. D. Lathe.
72"x58" Niles-Bement-Pond M. D.
50"x30" New Haven, M. D.
48"x20" N-B-P Motor Drive.
42"x39" Putnam Motor Drive.
42"x50" American Motor Drive.
42"x50" Putnam Motor Drive.
42"x18" American Motor Drive.
36"x20" American Motor Drive.
30"x12" Lodge & Shipley Grd. Hd.
30"x12" American Geared Head.
30"x12" H-S-G Geared Head.
26"x22" Boye & Emmes M. D.
28"x28" Hamilton Motor Drive.
G. & E. Shaper, 16", 20", 24", 32".
American Shaper, 16", 20", 24".
Queen City Shaper 28".
N-B-P Traveling Head 26".
Newton Rotary Planer, 84".
Sellers Planer, 10"x10"x24".
Pond Planer, 84"x84"x15".
D. & H. Openside 72"x72"x18".
Cincinnati 48"x36"x20".
Cincinnati 48"x48"x10".
Cincinnati 36"x36"x8".
D. & H. Openside 36"x36"x12".
Gray Planer, 26"x26"x8".
No. 55 Ferracute Press.
15-Ton Lucas Forcing Press.
No. 1 Bliss Toggle Press.
No. 4-P Ferracute Press.
Greenard Arbor Press Nos. 4, 7, 8.
Ajax Upsetter $\frac{3}{4}$ ", $1\frac{1}{2}$ ", 2".
Acme Upsetter $1\frac{1}{2}$ ", $2\frac{1}{2}$ ".
Ingersoll Compressor 12"x12".
Penn Compressor 10"x9".
Hilles-Jones Bending Roll No. 3-H.
Bertsch Angle Bender 3".
24" Bullard Boring Mill.
36" Bullard Boring Mill.
42" Bullard Boring Mill.
Rotary Table Cincinnati 20".
Fays Automatics.
Gorton Cutting-Off No. 2-B.
Root Pressure Blower.
Garvin Tappers No. 2, No. 2-X.
Baker Tapper 7".
Newton Slotter 15".
Ingersoll Slab Mill 59x20x12".
Ingersoll Slab Mill 40x22x6".

Write for "Simmons Pictorial News"

Simmons Machine Tool Corp.

NEW YORK
149 Broadway

ALBANY
1212 Troy Road

BUFFALO
88 Exchange St.

Real Bargains LIKE NEW Rebuilt Planers

**36x30x12' CINCINNATI,
2 Heads on Cross Rail.**

**42x36x20' CINCINNATI,
Rap. Trav. 4 Heads.**

**42x36x21' CINCINNATI.
4 Heads.**

**42x42x26' CINCINNATI.
Rap. Trav. 4 Heads.**

**48x48x28' CINCINNATI.
2 Heads.**

**72x62x14' CINCINNATI.
4 Heads.**

**108x72x24' CINCINNATI.
Rap. Trav. 4 Heads.**

**The
Cincinnati Planer
Company**

CINCINNATI,

OHIO

Real Buys—Guaranteed

LARGE AND ASSORTED

Partial List—Have Many Others

ENGINE LATHES

- | | |
|---------------------------------------|---|
| 14"x 6' LeBlond, l. c. g. and chuck. | 18"x 7' Fulton heavy duty friction |
| 14"x 6' Hamilton. | hd. pl. turning lathe, pan bed, dbl. |
| 14"x 6' Porter, compound rest and | tool post and countershaft, new. |
| taper attachment, l. c. g. | 18" x 8' Porter, 4-step cone, s. b. g., |
| 16"x 8' Lodge & Shipley, old style, | q. c. g. engine lathe, complete, new. |
| compound rest, q. c. g. | 18"x 10' Star, 4-s. c., s. g., with 16" |
| 16"x 8' Bradford, c. r., loose change | 4-jaw ind. chuck. |
| gear. | 20"x 8' Reed friction head, with |
| 16"x 8' Monarch, compound rest, | turret on carriage. |
| standard pattern. | 20"x 10' Boye & Emmes, c. r., q. c. g. |
| 18"x 8' Prentice, compound rest, | 24"x 10' Greaves & K., c. r., q. c. g. |
| l. c. g., chuck. | 30"x 10' S. & B. c. r., loose change gear |

TURRET LATHES AND SCREW MACHINES

- | | |
|--|--|
| No. 00 Brown & Sharpe auto. | No. 3 Foster g. f. h. turret screw mch., |
| No. 0 Brown & Sharpe auto., (2). | with p. f. carriage and turret. |
| 12" W. & S., friction head. | 24" Cleveland model "A" auto. |
| 12" W. & S., friction head, with set- | screw mch., with 5-hole turret. |
| over turret. | No. 2-G Brown & Sharpe auto- |
| 14" W. & S., friction head, (2). | matics (2). |
| 16" W. & S., friction head. | No. 2 Brown & Sharpe turret form- |
| No. 4 Warner & Swasey, p. h., a. c. | ing (2). |
| and b. f. | 1"x 7" Millholland, pl. hd., auto. ck., |
| No. 2 Warner & Swasey, p. h., a. c. | bar fd., hand fd., cross slide and |
| and b. f. | turret, complete, new. |
| No. 4 Warner & S., g. f. h., a. c. and | 1"x 7" Millholland turret screw mch., |
| b. f. | pl. hd. auto. ck., bar feed hand fd. |
| No. 55 Nat'l Acme 4-spdl. auto. | cross slide, with power fd. tur., new. |

DRILLING MACHINES

- | | |
|--|---------------------------------------|
| No. 1-S Garvin duplex, (2). | No. 14 Natco (2). |
| 24" American enclosed head, gear | Fox multiple spindle, sliding head, |
| box, belt drive, Radials (2). | arranged for 12 spindles (4). |
| 3" American sensitive radial with | 3-sp. Edlund, high sp., ball bearing. |
| t. a. and elevating table. | No. 22 Colburn, sgl. sp., hvy. duty, |
| 4" Mueller, gear box, sgl. pulley dr. | 14" cap., with solid spindle and |
| 8" and 6" Americans, tr. grd., 8-speed | flange for receiving multiple drill |
| change, gr. box, sgl. pulley drive. | heads, new, (2). |
| 21" Aurora W. & L., square base, | No. 30 Natco, belt driven. |
| stationary head. | No. 44 Colburn, sgl. sp. heavy duty, |
| 6" Western, with speed box, tap. att. | 24" cap., with solid sp. and flange |
| 8" American triple purpose, with | for receiving multiple drill heads, |
| speed box. | new, (2). |
| No. 14 Colburn heavy duty. | Colburn horizontal duplex drill, 24" |
| No. 25 Foote-Burt heavy duty, (2). | cap. with rotating table, arranged |
| 12-spindle Moline, cam fd., two tbl. | for motor drive, new. |
| No. 1, 7" overhang, single spindle, | No. 34 Demco high speed bench |
| Allen, h. s., b. b. (3). | drill with C spindle, new. |

The Strong, Carlisle & Hammond Co.,

Rebuilt Machine Tools

STOCK TO DRAW FROM

—Send Us Your Inquiries.

MILLING MACHINES

No. 0 Bickett, hand, bench type, (3).
 No. 2 Cincinnati vertical, s. p. d.
 No. 3 Cincinnati, plain, s. p. d. (2).
 24"x18"x60" Ingersoll, Farwell vertical milling head.

Becker 2-spindle, with rotary table.
 No. 12 B. & S. manufacturing.
 13-B Brown & Sharpe, plain manufacturing, (2).

SHAPERS AND PLANERS

16" American back geared, single pulley drive, motor driven, 440 volt, 3 phase, 60 cycle mtr., t. b. control.
 20" Kelly b. g. crank.
 20" Hendey friction, (2).
 16" Smith & Mills, back grd. crank.

22"x22"x 5' Putnam planers, (2).
 24"x24"x5' Cincinnati, one head.
 30"x30"x10' Woodward & Powell, three heads.
 72"x72"x26' Fitchburg, four heads.

CENTERING MACHINES

Centering machines, single spindle Cadillac.

GRINDERS

No. 2 Cincinnati univ., latest type.
 No. 3 Diamond wet tool grinder with drop apron, new.
 No. 4 Diamond wet tool grinders with drop apron, new, (2).
 No. 10 Brown & Sharpe plain.
 No. 14—48" B. & S. plain.
 No. 24 Landis plain.
 8" Heald rotary surface grinder with magnetic chuck.
 No. 6-A Bryant internal.
 Webster & Perks, h. s., b. b., double spindle polishing lathes, cabinet base (9).
 No. 3 Brown & Sharpe planer type surface grinder.

No. 14 Besly disc grinder.
 No. 10—18" Besly disc grinder.
 No. 6—18"—1 Besly disc grinder.
 Gisholt universal form tool grinder.
 J. B. Point "Yankee" drill grinders, complete, new, (2).
 Type "DE" Hissey-Wolf internal.
 No. 11 Brown & Sharpe pl. grinders.
 Plain emery wh'l stand with column.
 No. 24 Woods cutter and reamer grinder, complete, new.
 20" Whitney wet tool grinders, complete with countershaft, new, (2).
 C3A Grand Rapids duplex drill grinders with wet att., new, (2).

MISCELLANEOUS

Arbor press, No. 28 Atlas.
 Bolt cutter, 1" National 2-spindle, with Landis heads.
 Boring or drilling machine, No. 1-S Garvin duplex horizontal, (2).
 Broach, No. 2 double Lapointe.
 Hammer, No. 14-B High Speed.
 Hand brake, 3' Dreis & Krump.
 Hand brake, 5' Dreis & Krump.
 Layout plates, 30"x36" and 36"x48"
 C. I., mounted on portable stand.
 Marking machine, Etchograph.

Oil extractor, No. 150 Curtis.
 Oil extractor, No. 400 Curtis with hoist.
 Oil extractor, large size American, with pedestal for motor drive.
 Pipe machine, No. 300 Oster, 1" to 2".
 Pipe machine, 8" Jarecki, No. 88.
 Profiler, No. 12, 2-spd. P. & W. vert.
 Scleroscopes, Shore, (4).
 Slitting shear, No. 206 Niagara, pwr.
 Toggle drawing press, No. 1 Bliss, double action.

Cleveland, Ohio; Detroit, Michigan

REAL VALUES

RADIALS AND UPRIGHT DRILLS

6' Cincinnati Bick. Plain, g. b. d.
5' & 4' Drees Hi Duty, Pl., g. b. d.
5' American Tool Wks. t. g. Pl., g. b. d.
3 1/2' Cincinnati Bickford Plain, g. b. d.
3 1/2' & 3' Mueller Plain Radial, g. b. d.
4' Hammond b. b. Sens. Radial, t. a.
4' & 3' American b. b. Sens., t. att.
3' Carlton b. b. Sens., tap. att.
3' Western Pl. Radial, g. b. d., late type.
2 1/2' Plain Gang Radial, g. b. d.
Nos. 1 & 3 W. F. & J. Barnes Hor. Rad.
30" & 28" Snyder Upright Drill.
28" & 26" W. F. & J. Barnes Up., latest.
26" W. F. & J. Barnes Up. t. a.
25" Snyder Upright Drill.
25" & 22" Kokomo High Speed Up.
24" Aurora Upright.
24" Cin. Bickford, Up., g. b. d., t. a.
24" Sibley Upright Drill.
24" Cincinnati-Bickford Upright Drill.

22" W. F. & J. Barnes Upright, t. a.
21" Cincinnati-Bickford Upright Drill.
3-Spindle W. F. & J. Barnes Gang 26".
6-Spindle 20" Hoefer Gang Drill.
Detroit 5-Spindle Horiz. Drill Press.
Allen 2-sp. b. b. Drill, No. 2 Morse taper.
3-sp. Superior b. b., No. 3 Morse taper.
Kern 4-sp. b. b. Drill, No. 2 Morse taper.
Allen s. sp., b. b., No. 2 Morse taper.
No. 310 Baker Bros. heavy duty Drill.
No. 2 Mfg. Colburn heavy duty Drill.
No. 25 Foote-Burt heavy duty Drill.
No. 12 Pratt & Whitney Multiple Drill,
equipped with 8 spindles.
D-No. 2 Colburn Heavy Duty Drill.
No. 0 Fox Multiple, 6-spindles.
No. 3 Fox Mult., equipped 12 spindles.
No. 5 Fox Multiple, 12 spindles.
No. 13 Pratt & Whitney Mult., 8-spells.
No. 37 Natco Mult., equip. 20 spindles.

ENGINE AND TURRET LATHES

42"x30" Amer. g. h. Lathe, q. c., late.
36"x30" Amer. tr. grd., q. c., late type.
36"x18" Amer. tr. gd., q. c., late type.
36"x22" Springfield tr. grd., stan. ch.
28"x18" Schumacher & B. q. c. Lathe.
42"x18" Amer. G. H., q. c. m. d., late.
28"x14" Schumacher & B. q. c. Lathe.
24"x12" LeBlond q. c. Lathe.
30"x14" Lodge & Shipley q. c.
24"x12" Lodge & Shipley q. c. Lathe.
21"x10" LeBlond gd. hd., q. c., late.
24"x10" G. & K. q. c.
24"x10" Bove & Emmes q. c. Lathe.
22"x12" Whitcomb-Blaisdell semi-q. chg.
21"x10" LeBlond q. c. Lathe.
20"x10" American q. c.
19"x10" LeBlond q. c. Lathe.
18"x12" Cinco q. c. Lathe.
18"x10" Greaves & K. q. c.
18"x8" LeBlond q. c. Lathe.
18"x 8" Mueller, q. c. Lathe.
18"x8" L. & S. sel. grd. hd., q. c.
16"x10" Hendey, yoke hd., q. c., t. a.

16"x 8" Lodge & Shipley, q. c., late type.
16"x8" and 16"x6" Hendey yoke head,
q. c. Lathe, taper att., late type.
16"x 6" Monarch quick change Lathe.
14"x 6" L. & S. sel. grd. hd., q. c., late type.
Nos. 2A & 3A Warner & Swasey, Univ.
hol. hex. Turret Lathes.
No. 1-B Foster Univ. Hol. Hex. Turret
Lathe, bar equipment.
No. 1-B Foster Univ. Hol. Hex. Turret
Lathe, air chucks.
24" & 21" Gisholt Turret, taper att.
3"x36" J. & L. Turret, bar equipment.
3"x36" J. & L. Turret, chuck equip.
3"x36" J. & L. dbl. apdl. Turret Lathe.
3 1/4"x40" Greenlee Tur., bar equip.
Nos. 2, 4, 6 Warner & S. Turret Lathes.
Nos. 2, 4, 6 Foster Turret Lathes.
No. 4 Brown & Sharpe Wire feed Screw
Machine.
No. 4 Bardons & O. Turret Lathes.
No. 4 Millholland Turret, g. h., m. d.
1" Biggs Hand Screw Machine.

GEAR MACHINERY AND GRINDERS

No. 5-A Lees-B. Gear Hobber.
No. 12 Barber-Colman Gear Hobber.
6" Gleason Bevel Gear Generator.
No. 6 Fellows Gear Shapers.
20" Ingle Gear Tooth Rounding Mche.
24" Cin. Auto. Spur Gear Cutting.

No. 6-60" B. & S. Auto. Sp. Gr. Cut.
No. 4-48" B. & S. Auto. Spur Gear Cut.
No. 3-26" B. & S. Auto. Spur Gear Cut.
No. 13 B. & S. Aut. Spur & Bevel Cut.
84" Diamond Face Grinder, arr. for m. d.
No. 3 B. & S. planer type Surface.

EASTERN MACHINERY CO.

We also Buy machinery.

Rebuilt and Guaranteed Machine Tools

No. 3 W. & M. Auto. Surf. mag. chk.
 No. 2 Brown & S. Auto. Surf. mag. chk.
 No. 2 LaSalle Auto. Surf. mag. chuck.
 16" Heald Rotary Surface mag. chuck.
 8" Arter Rotary Surface mag. chuck.
 14" P. & W. Vert. Surf. Grind., m. c.
 6"x32" Norton Pl., late, 8200 serial.
 10"x36" & 10"x52" Landis Pl., s-con.
 8" Heald Grinder & Surf. Style No. 200.
 Nos. 70 & 75 Heald Internal Grinders.
 No. 60 Heald Cyl., late type, complete.
 Capital Internal, collet attachment.
 No. 120 Gardner Double Disc.

No. 18-30" Gardner Pat. Mkrs. Disc.
 Walker single stroke Surface Grinder,
 10" dia. magnetic chuck.
 No. 8-40" Gardner Disc with Press.
 Nos. 1 & 3 Brown & Sharpe Universal.
 6"x15" Fitchburg Plain Grinder.
 6"x18" Landis Pl. self-cont. arr. m. d.
 No. 1-4"x20" Morse Plain Grinder.
 12"x36" Cincinnati Plain.
 8"x30" Modern Plain, self-contained.
 No. 2 Oakley Univ. Tool & Cutter.
 No. 2 Norton Univ. Tool & Cut. Grinder.
 No. 1 LeBlond Univ. Tool & Cutter.

SHAPERS AND PLANERS

24" Milwaukee hvy. duty, b. g. Crank.
 24" Ohio hvy. duty, b. g. Crank.
 20" Gould & Eberhardt b. g. Crank.
 20" Cincinnati heavy duty b. g. Crank.
 16" G. & E. high duty b. g. Crank.
 16" Gould & Eberhardt High Duty b. g. Crank.
 16" Hamilton heavy duty, b. g., Crank.

16" Smith & Mills h. d., b. g., Crank.
 16" Steptoe heavy duty, b. g., Crank.
 16" Cincinnati Hvy. Duty b. g. Crank.
 15" American Tool Works Crank.
 14" Steptoe Crank.
 38"x38"x18" Niles Planer, 2 heads.
 36"x36"x10" N-B-P Pl., 2 hds., arr. m. d.
 24"x24"x8" W. & P., 1 head.

MILLING MACHINES

No. 4 LeBlond Univ., cone pul. complete
 No. 4 B. & S. Univ., c. p., complete.
 No. 4 Cincinnati Plain, cone pulley.
 No. 3 Hendey Univ., c. p., complete.
 Nos. 3 B. & S. Univ., c. p., comp.
 No. 2 Cincinnati Univ., c. p., complete.
 No. 1-B LeBlond Univ., cone pul. comp.
 No. 1 1/2 Valley City Univ., c. p., complete.
 No. 1 1/2 Owens Univ., cone pul. compl.
 No. 1 Hendey Univ., cone pul. compl.
 No. 1-B B. & S. Plain, single pulley.
 No. 5 LeBlond Plain, m. d., all geared.
 No. 3 Hvy. Ohio Plain, c. p., p. r. t.
 No. 3 Hvy. LeBlond Plain, cone pulley.
 No. 3 Kemp Smith Plain, cone pulley.
 Nos. 2 & 3 Cincinnati Plain, cone pulley.

No. 2 1/2 LeBlond Plain, c. p.
 Nos. 0 1/2 & 1 1/2, Cincinnati Pl. c. p.
 No. 1 Kemp Smith Plain, cone pulley.
 No. 2-B B. & S. Plain, single pulley.
 No. 21 Brown & S. Auto., latest type.
 18" Cincinnati Pl. Auto. Miller.
 No. 2 Brown & Sharpe Vertical Millers.
 No. 3 Cin. high pwr. Vert., sq. pulley.
 No. 4 Becker Vertical Miller.
 28" Cincinnati Semi-Auto. Duplex.
 24" Cincinnati Automatic Duplex Miller.
 18" Cincinnati Plain Mfg. Millers.
 Gooley & Edlund, Briggs type, Mfg.
 No. 6 Whitney Hand Miller.
 No. 2 Bristol b. b. Hand Miller.
 No. 2 Knight Milling and Drilling Mche.

MISCELLANEOUS

No. 5 Greenerd Arbor Press.
 No. 4 Atlas Arbor Press.
 No. 55 Atlas Power Arbor Press b. d.
 15-Ton Herc. Pwr. Arbor Press.
 No. 24 New Brit. Auto. Chkg. Mche.
 1 1/4" Model "B" Cleveland Automatic.
 No. 52 Nat. Acme Automatic.
 No. 3A LaPointe (Hudson) Br. Mch.

15 and 30 ton Lucas Power Forcing
 Presses, b. d.
 No. 3 J. N. LaP. Dbl. Broach. Mch.
 No. 3-B J. N. LaPointe Broach. Mch.
 2" D. & H. Bolt Cut., 2" Landis die hd.
 1" Acme Class "A" Bolt Cutters.
 1 1/2" & 2" Landis dbl.-sp. Bolt Thread.
 1" Landis Bolt Thread, lead screw.

(Continued on next Page)

And Many Others. Send Us Your Inquiries.

408 E. Pearl St., CINCINNATI, O.

What have you to Sell?

Miscellaneous Tools (Continued from Preceding Pages)

42" Bausch Vert. Boring Mill, 2-hds.
 24" Bullard rapid prod. Vert. Boring Mill, turret and side head.
 30" King Vertical Boring Mill, turret head, power rapid traverse, m. d.
 51" Niles Vert. Boring Mill, 2-heads.
 51" Bullard Vert. Boring Mill, 2-hds.
 Nos. 2 & 3 P. & W. Die Sinkers.
 No. 64 Cons. s. s. Power Press, sgl. cr.
 No. 3 Bliss, Scales pattern, Pwr. Press.
 No. 73½ Bliss Trim. with side shear.
 6' Toledo Pwr. Sq. Shr., 14 ga. cap.
 No. 272 Niagara 72" Pwr. Sq. Shear.
 72" Kutschied Pwr. Sq. Shear, 12 ga.
 No. 552-52" Niagara Power Gap Squaring Shear, 16 ga.
 No. 1 Davis Keyscutters, cap. 1".
 No. 00 Baker Keyscater, cap. ¾".
 No. 5 M. & M. Keyscutters.
 25 lb. Little Giant Trip Hammer.

No. 3A High Speed Riv. Hammer.
 40 & 60 lb. Bradley Helve Hammers.
 600 lb. Chamb. Sgl. Frame St. Ham.
 4½"x12" & 6x14" P. & W. Thread.
 No. 12 P. & W. 2-spindle Profilers.
 No. 1 Garvin 2-Spindle Profiler.
 No. 1 P. & W. 2-sp. Gun Bar. Drill.
 Nos. 1, 2 2X, 2BG Garvin Auto. Tap.
 18"x12"x12" Worthington dbl. steam drive Air Comp, cap. 700 cu. ft.
 12"x12" Racine Hi. Spd. Pwr. Hack.
 6"x6" Peerless High Speed Hack Saw.
 6"x6" Racine H. Spd. Pwr. Hack Saw.
 12" Wm. Sellers Slotter, cir. table.
 Blevens type "A" Polishing Mche.
 Winfield Elec. Spot Welder, cap. to weld 2 pieces of ¾" material.
 No. 3 Toledo El. Butt Weld., cap. ¾".
 No. 139 Thomson Elec. Spot Welder, cap. to weld 2 pieces 14 ga. material.

Many Others. Send Us Your Inquiries.

EASTERN MACHINERY CO.
 408 E. Pearl St., Cincinnati, Ohio

WAYNE Greater Values

No. 4-B Heavy Brown and Sharpe Plain Miller, single pulley drive, table 19"x70".....\$1000.
 42" Niles-Bement-Pond Boring Mill; Two heads, single pulley gear box drive..... 800.
 24"x6' Ingersoll Horizontal Miller..... 500.
 30"x30"x6' Gray Planer, 2 heads..... 550.
 42" Throat Lenox Splitting Shear ¾" capacity..... 500.
 3"x36" Pratt and Whitney Hollow Hex. Turret Lathe, large equipment of tools..... 600.
 2" Universal Bolt Cutter, Motor driven through gear box, new..... 500.

Wayne Machinery Company
 FORT WAYNE, INDIANA

Bargains ^{In New} and Used Tools

Used 3-B Kearney & Trecker Plain Miller, m. d., a. c.

Used 36" Bullard Boring Mill, Side Head

MILLING MACHINES

Used No. 1 Kempsmith univ., all equipment including vert. attach.
Used No. 1 1/2 B. & S. universal.
Used No. 2 Cinti univ., cone head.
Used No. 3 Cinti plain, cone head.

Used No. 2 B. & S. univ., cone. h.
Used No. 2 Kempsmith universal.
Used No. 2 B B. & S. plain, g. h.
Used No. 3 Brown & Sharpe, plain.
Used No. 3 Cincinnati pl., vert. att.

LATHES

Used No. 3 Hardinge bench, 1/2" cap.
New 11"x8' Seneca Falls.
Used 14"x6' Bradford taper, q. c.
Used 14"x6' Monarch, q. c.
Used 14"x6' Hendey, q. c.
Used 15"x6' Sunstrand semi-q. c.
Used 16"x6' Hendey, q. c.
New 16"x7' Chard Mfg. type.
Used 16"x8' Advance q. c. chucks.
Used 18"x8' Lodge & Shipley, q. c.
New 18"x8' South Bend, pl. change.

Used 18"x10' Monarch, q. c.
Used 18"x10' American, q. c.
New 18"-28"x8' South Bend gap.
Used 20"x10' Greaves-Klusman.
New 20"x8' Boye & Emmes, q. c.
New 20"x10' Monarch, q. c.
Used 24"x12' Boye & Emmes, q. c.
New 26"x14' Boye & Emmes, q. c.
New 26"x12' Boye & Emmes, q. c.
Used 24"x16' Boye & Emmes, pl. c.

SENSITIVE DRILLING MACHINES

New Allen Drills, 1, 2, 3 & 4 spdls.
Used 1-spindle Allen Drill.
Used 2 and 3 spindle Allen.

Used 4-spindle Allen Drills.
Used 2-spindle Avey, ball bearing.

RADIAL DRILLS

New Dreses 3' Simplex, speed box.
New Dreses 8' multi-duty.

Used 5' Dreses.
Used Hammond type B sensitive.

UPRIGHT DRILLS

Used 20" Hoefler wheel and lever fd.
Used No. 2, 22" Colburn mfg. type.
New 23" Snyder, tapping att.
Used 24" Mechanics, sliding head.

Used 24" Barnes camel back.
Used 25" Barnes, stationary head.
Used 26" Barnes, sliding head.
New 30" Snyder, sliding head.

MULTIPLE DRILLS

New Baush No. 4 hd. 22x5:41 spdls.

New Baush No. 4 hd. 30x46 22 spdls.

SHAPERS AND PLANERS

Used 16" Smith & Mills.
Used 20" G. & E. back geared.
Used 24" Cincinnati, b. g.

Used 24" Gould & Eberhardt, b. g.
Used 26"x26"x8' Flather, 1 head.
New 36"x36"x12' W. & P., 2-heads.

GRINDERS

New Morse No. 3 plain, 8"x40".
Used No. 10 B. & S. plain, 6"x20".
Used Gisholt tool grinder.
New Churchill internal.

New No. 9 Cincinnati internal.
Used Bridgeport No. 110 knife grinder, belt or motor drive.

TURRET LATHES AND SCREW MACHINES

Used No. 3 A W. & S. universal.
Used No. 3 Superior.

New No. 4 Wood tilted turret
Used No. 3-A W. & S. turret (3).

MISCELLANEOUS

New 4" Standard pipe machine.
Used 6" Landis pipe machine.
Used No. 4 LaPointe Broach.

New No. 3-B LaPointe broach.
New Nos. 1, 2, 3, 4 and 5 Federal presses o. b. l.

Manning, Maxwell & Moore, Inc.
27 N. Jefferson St., Chicago, Ill.

Bath's Guaranteed

Bolt Cutters

1½" Acme staybolt cutter.
1½" Landis, sgl. head, with dies.

1¼" Landis, double head, with dies.

Boring Mills—Vertical

44" Baush, 2 swivel heads.
48" Colburn boring mill.
52" King vertical 2 head, rapid traverse, late design.
51" Niles-Bement-Pond.

84" Ridgway 2 heads, gear feed, excellent.
10" Betts, 2 heads, rapid power traverse, motor drive, excellent.

Cranes

15-ton Niles and P. & H. Cranes, 51' and 45' spans, D. C.

Drills

Allen single spindle ball bearing.
4-spd. Moline rail drill, 1½" cap.
No. 1, 8" wall radial.
21" Cincinnati Bickford, sliding head, late type.
24" No. 25 Foote-Burt, with compound table.

Several 20" and small sens. drills.
20" Barnes drill press, 3-spindle.
No. 41 Natco, round index table, 8-spindle.
4" Prentice Radial.
24" Foote-Burt, S. P. D. reversing spindle for tapping.

Forging Machines and Bulldozers

4" Ajax, steel bed.
2" Ajax, cast iron bed.

¾" and 1½" Acme, steel bed.
No. 2 Williams & White bulldozer.

Grinders

84" Diamond face grinder.
16x96" Norton plain.
Various electric floor grinders and grinding stands.
26" horizontal disc grinder.
No. 2 Gardner belt driven disc grinder, 18" wheels.

Keyseaters

No. 00 Baker, capacity ¾"x8", tilting table.
No. 2 Baker, capacity 2"x20½".
No. 5 Mitts & Merrill, 3½" capacity.

Lathes

12"x5" Carroll-Jamieson.
16"x6" Pratt & Whitney, q. c. g., taper attachment.
16"x8" Pratt & Whitney, semi q. c. g., taper and relieving attach.
26"x14" Greaves-Klusman lathe.
30"x14" Boye & Emmes, double back geared.
36"x14" Schumacher & Boye, triple geared.
42"—60"x34" Houston, Stanwood & Gamble, grd. hd., mtr. dr.

CYRIL J. BATH & CO., E. 70th &

Cleveland Stock

Tumbling Barrels

Several sets 18"x48" steel lined, square, with roller bearings and exhaust.

Milling Machines

Style "B" Gooley & Edlund, table 54"x11½", (2).
20"x7½"x18" Oesterlein plain, belt drive.
No. 0 Rockford plain, 22"x6½"x15".
No. 2-B heavy Brown & Sharpe plain, 28"x10"x19".
No. 4 Cincinnati high power miller, table 64½"x16½".
Nos. 2 & 3 Pratt & Whitney Die Sinkers.

Planers and Shapers

36"x36"x14' Gray planer, 2 heads.
60"x60"x20' Cincinnati, 3 heads, very good.
48"x48"x14' Hamilton, 4 heads.
36"x12' and 48"x16' Detrick & Harvey openside planers.
12" Springfield, crank shaper.
24" Queen City shapers.

Punches and Shears

Garrison steel bed alligator shear, 2" capacity.
84" throat, Long & Allstatter, capacity about ¾" thru ¾".
48" throat No. 4 Southwark, capacity 2"x1¼".
48" throat Bement-Miles cap. 1¼"x1".
36" throat Lennox rotary shear, capacity about ½" plate.
Lennox rotary bevel shear, ¾" capacity.
No. 307 Niagara circle shear, ¼" capacity, 24" throat.

Turret Lathes and Screw Machines

No. 1-B Foster universal. No. 4 Bardons & Oliver.
3"x36" Jones & Lamson. 1" Garvin screw machine.

MISCELLANEOUS

Blower, No. 4 Root, motor drive. Hammer, 100 lb. Bradley helve.
Blowers, Nos. 1 & 2 Buffalo Forge. Pipe Machines, 8" Merrill.
Chain Hoists, ½, 1, 1½, 4 & 6 ton. Slotter, 48" Niles-Bement-Pond,
Cut-off Saw, metal, Hunter high motor drive.
speed, motor drive.

Machinery Av., N. E., Cleveland, O.

ReMANUFACTURED (ORIGINATED BY US)- MACHINE TOOLS

REG. U. S. PAT. OFF.

High Grade

OUR GUARANTEE



This is only a partial list. Write for price on any tool you need, whether listed below or not.

Lathes

- 1-45"x24" Pond.
- 1-36"x12" L. & S. Sel. Hd.
- 1-27"x16" L. & S. Sel. Gd. Hd.
- 5-26"x16" Niles-Bement-Pond.
- 2-26"x16" Whitcomb-Blaisdell.
- 10-26"x16" Bridgeford.
- 5-26"x14" Niles-Bement-Pond.
- 6-26"x12" Bridgeford.
- 13-26"x11" Wickes.
- 40-26"x10" Niles-Bement-Pond.
- 21-26"x10" Canada.
- 15-26"x10" Whitcomb-Blaisdell.
- 44-26"x10" Bridgeford.
- 12-25"x12" LeBlond.
- 1-24"x20" Reed-Prentice, Grd. Hd.
- 2-24"x10" American, Geared Head.
- 9-24"x10" Cisco.
- 5-20"x22"x16" American.
- 1-20"x10" Hamilton, M. D.
- 1-20"x 8" Hendey.
- 30-20-22"x8" American.
- 2-18"x8" Greaves-Klusman.
- 1-18"x8" L. & S. Sel. Grd. Head.
- 6-18"x8" Lodge & Shipley.
- 1-18"x14" Reed-Prentice, G. H.
- 1-16"x8" Lodge & Shipley.
- 2-16"x6" Pratt & Whitney.
- 1-14"x8" American Geared Head.
- 8-8" Fitchburg Loswing.
- 9-3 1/2" Fitchburg Loswing.

Horizontal Boring Machines

- 1-No. 40 Rochester.

- 1-2-spindle Espen-Lucas Boring, Milling and Drilling Machine.
- 5-No. 1 Barrett.
- 8-Rockford.

Auto. Screw Machines

- 6-No. 6-A Potter & Johnston.
- 2-No. 5-A Potter & Johnston.
- 1-No. 56 National Acme.
- 1-2" Cleveland.
- 1-14" 4-spindle Gridley.

Turret Lathes

- 2-24" Steidle.
- 1-24" Gisholt.
- 2-21" Gisholt.
- 3-20"x8" American.
- 24-19"x8" LeBlond Universal.
- 1-No. 2-A Warner & Swasey.
- 1-No. 7 Foster, Geared Head.
- 2-No. 3 Cincinnati-Acme Universal.
- 7-2-spindle Jones & Lamson.
- 3-16" Cincinnati-Acme-Fox.

Radial Drills

- 1-4' Western.
- 1-3' Gang Sensitive.
- 1-3' American Sensitive.

Drill Presses

- 1-No. 4 6-spindle Foote-Burt.
- 1-6 spindle Henry & Wright.
- 1-22" Barnes, Self Oiling.
- 1-No. 24 Foote-Burt.
- 2-No. 14 Colburn.
- 2-No. 314 Baker.

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HAYmarket
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HILL, CLARKE & CO. OF

-Economical-Ready to Produce

Your money back if you return a machine within thirty days. No excuses necessary.

Below, a small section of our stock



- 1-No. D-6 Colburn.
- 2-No. 2 Colburn.
- * 1-21" Weigel.

Gear Cutters and Hobbers

- * 1-No. 5 60" Brown-Sharpe.
- * 1-No. 12 Barber-Colman.
- 1-No. 18-H Gould & Eberhardt.
- * 1-No. 13 Brown & Sharpe.
- 3-No. 6 Fellows.
- 1-No. 3 36" Brown & Sharpe.

Vertical Boring Mills

- 2-72" Gisholt.
- 1-60" Colburn.
- 1-42" Gisholt.
- 4-36" Bullard, New Era.

Milling Machines

- 1-No. 5 Cincinnati Hi-Power.
- 2-No. 4 Cincinnati, Hi-Power.
- * 1-No. 3-B Milwaukee.
- 2-No. 3 Cincinnati.
- 1-No. 3 Brown & Sharpe.
- 2-No. 24 Rockford.
- 1-No. 2 Cincinnati.
- 1-No. 25 Becker.
- 1-No. 3-S Cincinnati Universal.
- 1-No. 2 Hendey Universal.
- * 1-No. 29 Ohio Universal.
- 1-No. 1-B Milwaukee Universal.
- 1-No. 1-D B. & S. Universal.
- * 2-No. 14 Garvin Duplex.
- 2-No. 3 Garvin.
- 3-No. 1 Van Norman, Hand.
- * 4-Type B Briggs.

Vertical Millers

- 1-Model ACS 2-spindle Becker.
- 2-Model SD Becker.

- 3-No. 6 Becker.
- 1-No. 5-C Becker.
- 2-No. 5-B Becker.
- 2-No. 3 Cincinnati.
- 1-Model CS Becker.

Planers

- 1-72"x84"x12' Gray.
- 1-42"x42"x22' D. & H.
- 1-42"x42"x12' Gray.
- 1-42"x42"x 9' Niles - Bement - Pond.
- 1-42"x36"x14' Cincinnati.
- 3-36"x36"x18' Cincinnati.
- 1-36"x36"x16' Rockford.
- 2-36"x36"x10' Cincinnati.
- 1-36"x30"x20' Whitcomb-Blaisdell.
- 1-30"x30"x 8' Niles - Bement - Pond.
- 1-30"x30"x 8' Gray.
- 1-30"x30"x 8' Liberty.

Grinders

- 1-24"x96" Norton.
- 1-18"x96" Norton.
- 2-14"x72" Norton.
- 4-14"x50" Norton.
- 1-12"x120" Landis.
- 1-10"x72" Norton.
- 1-No. 16, 10"x72" B. & S.
- 1-10"x52" Landis.
- 6-10"x50" Norton.
- 1-No. 14, 10"x30" B. & S.
- 5-10"x36" Norton.
- 2-10"x24" Norton.
- 9-6"x32" Norton.
- 3-6"x18" Landis.
- 1-12"x36" Cincinnati Universal.
- 2-No. 24 Universal.
- 1-No. 60 Heald.
- 1-No. 70 Heald.

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Fine Machine

The scores of new and satisfied customers on our books, among whom are some of the largest and most discriminating buyers of machinery in the country, is the best evidence that we have the PRICES and the merchandise.

DRILLS

- 10 Aurora 21" - 24" Single Spindle
- 2 American 21" and 25" Single Spindle
- 7 Cincinnati 24" and 36" Single Spindle
- 4 Superior 20" and 26" Single Spindle
- 7 Barnes, 20", 22", 25" Single Spindle

DRILLS-RADIAL

- 3 American 36", Sensitive
- 3 Carlton Sensitive Motorized 36"

DRILLS-HEAVY DUTY

- 2 Baker No. 315

DRILLS-MULTIPLE

- 2 Foote-Burt Nos. 4, 4 and 6 spindle
- 2 Gardam Multiple, 10 and 34 spindle

GEAR HOBBERS AND SHAPERS

- 10 Fellows No. 6

GRINDING MACHINES

- 1 Brown & Sharpe No. 12
- 1 Cincinnati 12x36 Plain External
- 4 Norton Plain External, 10x50, 10x72, 14x72
- 1 Brown & Sharpe No. 22 Internal
- 10 Heald Internal Nos. 60 and 75
- 1 Norton No. 1 Universal Tool
- 1 Wilmarth & Morman No. 1 Universal

AUTOMATICS

- 1 Cleveland 2" Single Spindle
- 4 Gridley Single Spindle 2 1/4", 4 1/4"

The Indianapolis Machi

2141 Yandes Street

INDIANAPOLIS

Tools—

LATHES—ENGINE MISCELLANEOUS

- 3 American 14x6, 16x6, B. G., Q. C.
- 3 Carroll & Jamieson 14x6, B. G., Q. C.
- 4 Chard 24x11, B. G., Q. C.
- 4 Fitchburg Lo-Swing 3½x60
- 7 Greaves & Klusman 18x6, 18x8, 30x8, B. G., Q. C.
- 5 LeBlond 17x12, 21x10, 21x12, B. G., Q. C. Mfg.
- 5 Lodge & Shipley 18x8, 16x6, B. G., Q. C.
- 8 Sidney 17x8, B. G., Loose Change Gears.
- 2 Lodge & Shipley Duplex 24x12 Crank Pin

LATHES—TURRET

- 4 Acme 2¼x11 and 26"
- 14 Bardons & Oliver No. 4
- 4 Drees 20"
- 1 Warner & Swasey 18"
- 6 Warner & Swasey No. 3A
- 1 Milholland 2¼" No. 4

MILLING MACHINES HORIZONTAL

- 10 Pratt & Whitney Nos. 2, 6 and 10 Hand
- 1 Bilton No. 25
- 12 Briggs Heavy Duty Type A, 38"
- 1 Brown & Sharpe 2B Cone Type
- 2 Pratt & Whitney No. 2 Power Feed.
- 1—Cincinnati 3S Universal
- 2—Cincinnati 18" Duplex

MILLING MACHINES VERTICAL

- 2 Ingersoll 30x20x20, 12x18x18

SHAPERS

- 1 Lodge & Davis 16"

MISCELLANEOUS

Woodworking Machinery, Tinnern Machinery, Niagara Metal No. 80 Washing Machine, Profilers, Straightening Presses, Spot-Welders, Power Hack Saws, La-Pointe Broaches, Balancing Machines.

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INDIANA

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Machines of Quality

MACHINES OF THIS TYPE ARE HARD TO FIND

42" Bullard Vertical Turret Lathe, New Era Type.

24" Bullard Vertical Turret Lathe, New Era Type.

8' Cincinnati Boring Mill.

72" Newark Spur Gear Cutter.

60" Brown & Sharpe Spur Gear Cutter.

42"x32' American Geared Head Lathe, 2 carriages, motor drive.

36"x28' Lodge & Shipley Geared Head Lathe, with taper attachment.

No. 16 Blanchard Grinder, motor in head.

48"x48"12' Cleveland Open Side Planer, 2 rail heads, 1 side head.

12" Heald Rotary Surface Grinder.

No. 5 Cincinnati Plain Miller, Single Pulley Drive, Rapid Power Traverse.

No. 4 Warner & Swasey Universal Turret Lathe.

No. 32 Natco Multiple Spdl. Drill, 15 h. p. Western Elec. Motor, 440 v., 3 ph., 60 c. in starting box.

28" Gould & Eberhardt Invincible type Shaper, four-step cone drive.

THE MOTT & MERRYWEATHER MACHINERY CO.

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— Mean Satisfactory SERVICE

Mechanics appreciate our
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888 East 70th St., CLEVELAND, OHIO
The Motch & Merryweather Machinery Co.

Jones Machine Tool Co.

Front & Pike Sts.,

Cincinnati, Ohio

LATHES

36x14¹/₂ Putnam, semi-q. c., t. a.
36x14¹/₂ Pond, l. c., screw cutting.
24x16¹/₂ Bradford l. c., screw cutting.
24x10¹/₂ Monarch q. c., all back gear.
26x10¹/₂ Pond l. c., screw cutting.

14x 6¹/₂ Monarch, q. c., d. b. g., taper.
17x 8¹/₂ National, q. c., d. b. g.
18x 8¹/₂ Reed-Prentice, geared head.
20x 8¹/₂ American q. c., s. b. g.
20x12¹/₂ Bradford, l. c., screw cutting.

BORING MILLS

No. 0 Gidding & Lewis horizontal 3¹/₈" bar, No. 5 Morse taper, all power feeds, a. c. motor drive thru gear box.
10¹/₂ Niles Vertical Boring Mill, 2 heads, table 80"x4", cone drive and friction feed.

Fordick Horizontal, 3" bar, cone drive, all gear box drives and feeds.
42" Bullard Vertical, 2 heads, one swivel turret, all gear feeds.
36" Gisholt Vertical, 1 head, cone drive, all gear feeds.

PLANERS AND SHAPERS

48x36x12¹/₂ Cincinnati, 2 heads on rail.
30x30x12¹/₂ Cincinnati, 2 heads on rail.
30x30x8¹/₂ Cincinnati, 1 head on rail.

25" Smith & Mills b. g. Crank, cone dr.
24" Kelly, b. g. Crank, cone drive.
20" Steptoe b. g. Crank, cone drive.

RADIAL AND VERTICAL DRILLS

4¹/₂ Drees (oil groove base), motor drive thru gear box, all gear feed, tap. att.
4¹/₂ Dickford Plain Radial, single pulley thru gear box, tapping attachment.
6¹/₂ Drees Plain, all gear feeds, tapping attachment, box table.

24" Cincinnati, sliding head, back grd., all power down feed and tapping att.
24" Sibley & Ware, sliding head, back geared, power feed.
We have a large assortment of 20" Drills of various makes and types.

PUNCH PRESSES

No. 5-A Willard o. b. i. Press, weight about 2,250 lbs., stroke 2".
No. 3-A Willard o. b. i. Press, weight about 1000 lbs., stroke 1¹/₂".
No. 18 Bliss o. b. i. Press, weight about 750 lbs., stroke 1¹/₂".
No. 64 Consolidated s. s. Punch Press, weight about 5,200 lbs., width between uprights 18", stroke 3¹/₂".

No. 3 Bliss stilt back, Plain, flywheel type, weight about 3,000 lbs., str. 1¹/₂".
Robinson s. s. Punch Press, weight about 4,500 lbs., width between uprights 16", stroke 2".
Bertsch single end, architectural jaw, 18" throat.
No. 6 Whiting single end Punch and Shear, 12" throat, cap. 3/4 thru 3/4".

MISCELLANEOUS

No. 5 Greenard Arbor Press.
No. 6 Evansville Compound Arbor Press.
Lucas 50 ton Power Forcing Press.
Gas Furnaces, various sizes.
15" Gleason Gear Generator.
Ingle Tooth Rounder 12".
800 lbs. Niles Single Frame Hammer (Steam).
2,000 lbs. Niles Single Frame Hammer (Steam).
60 lb. Bradley Helve Hammer.
No. 1 Baker Keysater, 1¹/₂" cap.
No. 1 Colburn Keysater, 1¹/₂" cap.
No. 2 Davis Keysater, 5/8" cap.
1" Landis Bolt Cutter.
1¹/₂" Acme Bolt Cutter.

2¹/₂" Landis Bolt Cutter, lead screw.
16"x42" Landis Plain Cyl. Grinder.
10"x30" Landis Univ. Cyl. Grinder.
Walker Surface Grinder.
No. 1 LeBlond Tool & Cutter Grinder.
Sterling Tool & Cutter Grinder.
No. 60 Heald Cylinder Grinder.
20" Gardner Dac Grinder, motor drive.
Winfield Spot Welder.
Gisholt 24" Turret Lathe, 2 step cone, 6¹/₄" hole in spindle, taper attach.
Acme 3¹/₄x36" geared head Tur. s. p.
Warner & Swasey, Nos. 2 and 4.
Gridley Automatic 2¹/₄".
Jones & Lamson, 2x24" and 2x36".

Write for our Complete List

Priced To Sell

Boring Mills

- | | |
|--------------------------------|---------------------------------|
| 36" Bullard New Era Vert. Tur. | 72" Gisholt, 2 swivel heads. |
| 24" Bullard New Era Vert. Tur. | 72" Bullard, 2 swivel heads. |
| 42" Bullard, s. p. d. | 110" Betts, 2 swivel heads. |
| 16' Niles, 2 swivel heads. | 14'-20' Betts Extension. |
| No. 1 Barrett Horizontal. | 5" Detrick & Harvey Horizontal. |

Milling Machines

- | | |
|------------------------------------|----------------------------------|
| No. 3 Cinti. high-pwr., rap. trav. | No. 5 Brown & Sharpe Plain. |
| No. 4 Cincin. high-pwr., S.P.D. | No. 3 Brown & Sharpe Univ. |
| No. 5 Cincin. high-pwr., S.P.D. | No. 4 Cincinnati Vert., S. P. D. |

Power Preses

- | | |
|---|-----------------------------------|
| No. 268 $\frac{3}{4}$ Toledo Toggle Draw. | No. C-5 Ferracute Inclinable. |
| No. 68-G Niagara Dbl. Cr.-New. | No. 6 Adriance Inclinable. |
| No. 4 Zeh & Hahnemann Incl. | No. 4 Adriance Inclinable. |
| Nos. 19 and 20 Bliss Inclinable. | Nos. 2 and 4 Adriance Inclinable. |
| Manville & Waterbury D.Action. | No. 39 Bliss Horning Press. |

Lathes

- | | |
|--------------------------------|------------------------------|
| 38"x40" Johnson triple geared. | 66"x20" Putnam, Geared Head. |
|--------------------------------|------------------------------|

Planers and Shapers

- | | |
|--------------------------------|-----------------------------|
| 16" and 20" Gould & Eberhardt. | 10"x10"x34" Betts Planer. |
| 15" Smith & Mills. | 72"x60"x18" Pond Planer. |
| 14" Flather. | 30"x30"x 8" W. & P. Planer. |

Radial and Upright Drills

- | | |
|-----------------------------------|--------------------------------|
| 5" Baush Plain, s. p. d. | 5" Cincinnati-Bickford Plain. |
| 6" Cincinnati-Bickford Universal. | 42" Cincinnati-Bickford, m. d. |

Miscellaneous

- | | |
|---|---------------------------------|
| Bending Rolls, pyramid, 12"x $\frac{1}{2}$ ". | Turret Lathes, Gisholt, W. & S. |
| Automatics, Cleavelands var.sizes. | Rotary Shear, No. 6 Quickwork, |
| Grinder, No. 70 Heald Internal. | New. |
| Gear Cutters, 36"-48" B. & S. | Keller Automatic Die Sinking |
| Grinder, 16"x48" Landis Crksh. | Machine. |

Partial list only; own or have selling rights for over 500 machines of every description. Mail us your requirements. Also equipment you have for sale.

Sun Machinery Exchange, Inc.
39 Hamilton St., Newark, N. J.

Plate Working Machines—

- 10' Chicago steel brake, 10 ga., motor drive.
- No. 696 Niagara gap shear, 96" for 10 ga. belt drive.
- No. 15 Williams & White single end punch, 18" throat arch jaw, motor drive.
- No. 13 Williams & White single end punch, 15" throat plain jaw, bar and angle shear, motor drive.
- No. 4 Williams & White bulldozer, belt drive.
Punches and brake, nearly new.
Motors are 220 v., 3 phase, 60 cycle.

Other Presses and Machine Tools

- No. 59¼ Toledo straight side single crank press, tie rod frame, double geared, 12" stroke, belted motor drive, excellent condition.
- No. D-201 Ferracut double geared straight side, two shafts, 8" and 24", 200 ton capacity.
- No. D-151 Ferracut double geared straight side, stroke 13", 150 ton capacity.
- No. 76½ Bliss straight side, double geared, jaw clutch, 4" stroke, excellent condition.
- No. 2 Cincinnati universal miller, index centers, vise chuck and countershaft, rebuilt.
- No. 4 Cincinnati Hi Power vertical miller, slotted nose, fine condition.
- Nos. 5 and 6 Becker vertical millers, rebuilt.
- 20" Rockford back geared shaper, rebuilt.
- 36" Cincinnati Bickford radial drill.
- No. 00 B. & S. automatic screw machines.

Many Others. Send us your inquiries.

A. D. White Machinery Co.

108-114 N. Jefferson St.,

Chicago, Ill.

SPECIAL BARGAINS USED MACHINE TOOLS

Brown & Sharpe No. 3 Universal Grinding Machine,
with countershaft for belt drive.....\$ 500.

Brown & Sharpe No. 3 Planer Type Surface Grinding
Machine, taking 23" between housings, with table
14¼" wide by 68½" long, having three T slots
lengthwise, will grind work 11½" high by 60" long,
and takes wheels up to 12" diameter by ¾" face,
machine equipped with shelf bracket for motor
drive, or can be belt driven..... 500.
OR with 2 H.P., 220 volt, D.C. motor and rheostat.. 575.

Brown & Sharpe No. 10 Plain Grinding Machine, with
all standard equipment..... 1200.

Brown & Sharpe No. 2 Surface Grinding Machine,
belt drive, with standard equipment, Serial 3387.. 300.

Brown & Sharpe No. 2 Plain Milling Machine, cone
driven, all power feeds, Serial 1574, with double
friction countershaft, with two arbors, with plain
flanged vise, with yoke and oil pot..... 650.

Lucas Horizontal Boring, Drilling & Milling Machines,
with 2½" diameter spindle, with cone drive, and
countershaft; outer support adjusts vertically in
unison with head in the regular way from hori-
zontal shaft in the middle of the bed 750.

Giddings & Lewis No. 0 Horizontal Boring, Drilling
and Milling Machine, equipped with tight and
loose pulleys for belt drive thru gear box,
serial 4306, 1200.

The E. A. Kinsey Company

331-335 West Fourth St.,

Cincinnati, O.

BRANCHES: INDIANAPOLIS, IND. HAMILTON, OHIO. DAYTON, OHIO.
LOUISVILLE, KY.. COLUMBUS, OHIO

High Grade Machine Tools

Lathes

- 44"x40" Pond, cone drive, L. C.
- 42"x20" L. & S., Q. C. D. C. M. D.
- 36"x16" Fay & Scott, L. C.
- 36"x18" L. & S., Q. C. D. C. M. D.
- 32"x18" American, Q. C.
- 27"x12" LeBlond, Q. C. late type.
- 25"x10" LeBlond, Q. C. late type.
- 25"x18" LeBlond, Q. C. late type.
- 18"x 8" Rahn-Larmon Q. C. late type.
- 16"x 6" LeBlond Q. C. late type.
- 14"x 6" Monarch, Q. C.
- 14"x 6" Hendey, Yoke Head.
- 14"x 6" Mulliner, Q. C. late type.
- 9"x20" Rivett Bench Lathe.

Radial and Upright Drills

- 4" Dreses, G. B. D.
- 4" Dreses, High Duty, G. B. D.
- 5" American, T. G. G. B. D.
- 5" Cincinnati Bickford Full Universal, G. B. D.
- 6" Dreses Gear Box Drive.
- 28" Cincinnati Upright, C. D.
- 26" Cincinnati Upright, C. D.
- 26" Rockford Upright, C. D.
- 25" Barnes Upright, C. D.
- 25" Superior Upright, C. D.
- 21" Canedy-Otto, B. G. P. F.
- 14" Canedy-Otto, motor drive.
- 15" Barnes Upright.

Planers

- 24"x24"x12" Chandler, 2 heads.
- 26"x26"x 8" Woodward & P., 1 hd.
- 26"x26"x12" Blaisdell, 2 heads.
- 32"x32"x16" American, 2 heads.
- 32"x32"x16" Gray, 2 heads.
- 46"x46"x16" D. & H. Opens. 2 hds.

Boring Mills

- Cleveland Horizontal 2½" bar.
- No. 1 Rockford, 2" bar.
- 30" Colburn, Vertical.
- 36" Bullard, Rapid Production Vertical Turret Lathe.
- 51" Bullard Vertical, 2 heads.

Gear Cutters

- Whiton Auto. 36", Bevel & Spur.

- No. 3—26" B. & S. Automatic Spur.
- No. 6A Cincinnati 72" Automatic.
- 6" Gleason Generator.

Grinders

- No. 60 Heald, \$275.00 each.
- 10"x20" Landis.
- 10"x36" Landis, self contained.
- No. 2 B. & S. Universal, complete.
- 10"x72" Norton Plain.
- No. 1 LeBlond Tool Grinder.
- Modern Chaser Grinder.
- Yankee Drill and Tool Grinder.
- 14"x72" Queen City, new.
- 12"x48" Queen City, new.
- No. 41 Bealy, Disc, M. D.

Shapers

- 7" Rhodes Shaper and Slotter.
- 15" Springfield, cone drive.
- 16" Whipp, cone drive.
- 16" Cincinnati, b. & c. d.
- 20" Hendy.
- 24" Barker, cone drive.
- 28" Gould & Eberhardt, Invincible.

Milling Machines

- No. 6 Whitely, Hand.
- No. 3½ Fox.
- No. 2 Kemp Smith, Universal.
- No. 3 Cincinnati, cone drive.
- No. 3 B. & S. Plain, cone drive.
- No. 3 Cincinnati, Vertical.

Miscellaneous

- No. 3 Woods Tilted Turret.
- 2¼" Jones & Lamson Geared Head.
- No. 2 Foster Turret.
- No. 52 Cleveland Automatic.
- No. 195 American Can Punch Press.
- No. 4 McDonald Punch Press.
- No. 3 Ferracute Punch Press.
- No. 2 Kane & Roach Multiple P. & S.
- No. 7 Atkins Hack Saw 8x8.
- 6" Oster Pipe Machine.
- 8" Eaton Pipe Machine.
- No. 120 Grant Riveting Machine ¾".
- No. 0 Little Giant Keyseater.
- 300 lb. Beaudry Power Hammer.
- 36" Niagara Power Shear.
- No. 8 Long & A. Punch & Shear.

Write for Complete Catalogue—We Buy, Sell and Exchange

Cincinnati Machinery & Supply Co.
28 West Second St., CINCINNATI, OHIO

Real Values are Usual with Morey

BORING MILLS

- 2-Betts 10' vertical, 2 swivel hds.
- 1-Bullard 24" New Era.
- 1-Baush 42" vertical, 2-head.
- 1-Niles 42" vertical, 2-head.
- 1-Colburn 54" vertical, 2-head.
- 1-Colburn 72" vertical, 2-head.
- 1-Rockford No. 2 horizontal.
- 1-Bement-Miles horizontal.
- 1-Cleveland 24" bar, horizontal.

SCREW MACHINES—Automatic

- 12-B. & S. Nos. 8, 2, 2G auto.
- 17-Gridley 4-spindle 9/16", 3/4", 3/8", 1/2", 1 1/4", 2 1/2"
- 10-Gridley 3 1/2", 4 1/2" single spindle.
- 13-Cleveland 3 1/2", 4 1/2", 7 1/2", "A".
- 4-Cleveland 3 1/2", 4 1/2", 7 1/2", "B".
- 1-New Britain 1 1/2 x 7, bar.
- 14-New Britain Nos. 23, 24, 33, 34, 53.
- 2-National Acme Nos. 52, 54.
- 11-P. & J. No. 5-A, No. 6-A.

DRILLS—Multiple Spindle

- 3-Baush Nos. 2, 3 and 4.
- 4-Natco Nos. 11, 13, 14 rect. hd.
- 7-P. & W. Nos. 11, 12, 13.
- 1-Moline No. 5-D, 6-spindle.
- 1-Foote-Burt No. 25.
- 3-New Garvin 6-spindle.

DRILLS—Upright and Radial

- 5-Allen 3 and 4-spindle, h. a., b. b.
- 2-Colburn Nos. 7 and 4.
- 1-Barnes 4-spindle gang, 20".
- 2-P. & W. Nos. 1, 1 1/2 gun barrel.
- 1-H. & W. 4-spindle.
- 1-New No. 3 Turner vertical.
- 3-Baker No. 310.
- 1-Baush 6' radial.
- 1-N.B.-P. 96" plain radial.

PLANERS

- 2-Putnam 26x26x8', 2 heads.
- 1-American 36x36x12', 4 heads.
- 1-Gray 38x38x28', 3 heads.
- 1-Gray 42x42x14', 4 heads.
- 1-Gray 60x60x20', 4 heads.
- 1-Putnam 48x48x12', 2 heads.

TURRET AND SCREW MCHS.

- 9-Gisholt 24", 6 1/2" hole.
- 11-New P. & W. 7/16".
- 4-Greenlee 24x26.
- 4-J. & L. 2x24, 3x36.
- 1-Foster No. 1B.
- 2-Libby 26", 4 1/2" and 7 1/2" hole.
- 3-W. & S. Nos. 4 and 6.
- 6-Foster Nos. 4, 6.
- 1-Acme Fox Monitor.

MILLING MACHINES

- 2-B. & S. Nos. 2A & 3A universal.
- 1-Cincinnati No. 3 universal.
- 5-B. & S. Nos. 2, 3, 4, plain.
- 8-Cincinnati Nos. 2, 3, 4, 5 plain.

- 1-Hendey Norton No. 3 plain.
- 1-Kempsmith No. 3 plain.
- 11-Becker Nos. 3H, 4B, AB, 5C, 6, C1, vertical.
- 15-P. & W. 5", 8", 10" automatic.
- 9-P. & W. 4 1/2x12, 6x14, 6x48, 6x80 thread.

SHAPERS AND SLOTTERS

- 1-Stockbridge 20" shaper.
- 1-Ohio 22" crank shaper.
- 1-Columbia 28" shaper.
- 1-Queen City 16" shaper.
- 1-Rhodes 7" vertical shaper.
- 1-P. & W. 6" vertical.
- 2-Gould & E. 16", 24" shapers.

PRESSES

- 5-Bliss No. 52.
- 1-Toledo No. 165 toggle tierod.
- 1-Toledo rack and pinion.
- 25-Waterbury Farrel double connection, 2" and 4" stroke.

BOLT CUTTERS

- 1-Acme 2" double head.
- 3-Acme 1 1/2" 2-spindle.
- 2-National 1 1/2", 2-spindle.
- 1-Acme 4" single spindle.

GEAR CUTTERS

- 5-Barber Colman Nos. 3 and 12.
- 7-B. & S. 3x36, 3x26, 4x36.
- 2-B. & S. No. 6, 60" cap.
- 1-Lees-Bradner No. 5-A.
- 6-G. & E. No. 18-H.
- 20-Fellows Nos. 6, 61, 615.
- 11-Gleason 3", 6", 11", 18".
- 1-Gleason 24" bevel gear planer.
- 3-Fellows Gear Grinder.
- 10-Cross gear tooth rounders.

LATHES

- 12-Hendey 12"x5', 12"x6', 16"x6'.
- 4-Seneca Falls 12"x6', q. c. g.
- 10-South Bend 15x5, 18x8 gap.
- 1-Fay & Scott 20-42", gap.
- 1-Walcott 28"x10'
- 1-Bridgeford 26x12', q. c. g.
- 1-Greaves-Klusman 26x12'.
- 1-Johnson 30x12', motor drive.
- 1-Bridgeford 42x38', geared head..
- 3-LeBlond 26x10 duplex crank.
- 2-LoSwing 3 1/2x84, 2 carriage.
- 3-Porter Cable.
- 40-New Star—all sizes.

GRINDERS

- 2-Blanchard No. 16 surface, belt and motor drive.
- 4-B. & S. Nos. 10, 11, 12 plain.
- 4-Cincinnati No. 2, 12x36, plain.
- 7-Landis 6x18, 10x20, 10x36, 12x36.
- 7-Norton 6x32, 10x36, 16x36, plain.
- 5-Heald Nos. 68, 70 internal.
- 1-Bath universal grinder.

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- Gibb Seam Welder Type J.R., 22" thr.
- No. 10-A Federal Butt Welder.

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- 2—No. 2A W. & S. univ. hollow hexagon Turret Lathes.
- 1—No. 3A W. & S. Turret Lathe.
- 1—28" Libby Turret Lathe.
- 2—18" Libby Turret Lathes.
- 2—24" Gisholt Turret Lathes.
- 1—21" Gisholt Turret Lathe.
- 1—2x24 J. & L. Turret Lathe.
- 1—No. 6 W. & S. Turret Lathe.
- 1—No. 4 W. & S. Turret Lathe.
- 2—P. & W. 24" x 26" Turn-Table.
- 6—42" Pit Lathes.
- 1—Center Drive 54" Wheel Lathe.
- 1—No. 5A P. & J. Turret Lathes.
- 4—No. 6A P. & J. Turret Lathes.

DRILLS

- 1—D2 Colburn Drill Press.
- 2—No. 1 Minster Drill Presses.
- 3—No. 14 Colburn Stand. Drills.
- 1—No. 4 Colburn Mfg. Type.
- 1—22 1/2" Barnes Camel Back.
- 1—28" Snyder Sl. Head.
- 1—28" Aurora Upright Drill.
- 1—24" Superior Sl. Head.
- 1—22" Superior Sl. Head.
- 1—16" Kern Drill Press.
- 4—Demco Drill Presses.
- 1—Detroit b. b., h. a. Upright.
- 2—Langelier h. s., b. b. Bench Type Drills.
- 2—3-sp. Sipp Drill Presses.
- 3—No. 2B Edlund Drill Presses.
- 1—2-sp. Reed Sens. Drill.
- 1—5-sp. Detroit Hor. Drill.
- 1—Stecher Deep Hole Driller.

MULTIPLE DRILLS

- 1—No. 32 Natco Mult. Drill.
- 1—No. 27 H. C. Fox Multiple.
- 1—No. 30 Natco Multiple.
- 1—Baush 8-sp. Multiple.
- 1—No. 4 1/2 Foot-Burt Gang.
- 1—No. 17 Foote-Burt Multiple.
- 1—22" Barnes Camel Back.
- 1—20" W. & F. & J. Barnes Gang.
- 1—No. 3 Barnes Horizontal.
- 1—5D Moline Hole Hog Drill.

BORING MILLS

- 6—42" Bullard New Era.
- 3—36" Bullard New Era.
- 1—36" Bullard Rapid Production Type Vertical.
- 1—54" Gisholt Vertical.
- 1—42" Colburn Vertical.

RADIAL DRILLS

- 1—6" Bickford Plain.
- 1—No. 13 Natco Multiple.
- 1—5" Niles Semi-Universal.
- 2—5" Prentice Plain.
- 2—4" American Plain.
- 1—3" Cincinnati-Bickford Plain
- 1—4" Mueller Plain.
- 1—3" Fosdick Plain.
- 2—3" Canedy-Otto Radials.
- 2—4" Hammond Radial Drills.
- 1—3 1/2" Western Radial Drill.

SCREW MACHINES

- 17—No. 90 B. & S. Automatics.
- 1—No. 19 B. & S. Automatic.

SHAPERS

- 1—24" Steptoe Shaper.
- 1—24" Stockbridge h. d., b. g., Cr.
- 1—22" Smith & Mills b. g. Crank.
- 1—20" Steptoe Shaper.
- 1—20" Milwaukee Shaper.
- 1—16" Ohio h. d., b. g., Crank.
- 1—16" Steptoe Shaper.
- 1—16" Hendey Shaper.
- 1—16" Rockford Shaper.
- 1—16" American b. g. Crank.
- 1—7" Rhodes Shaper.
- 1—36"x36"x16" N. B. P. Planer.
- 1—30"x30"x8" Rockford Planer.

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- 1—72"x16" G. & E. Auto. Gear Cut.
- 1—No. 1 Farwell Gear Hobber.
- 1—24"x12" G. & E. Gear Hobber.

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- 1—Potter & Johnston Automatic.
- 1—No. 4G LeBlond Heavy Duty.
- 1—No. 3 Kempsmith Plain.
- 1—No. 2 Hendey (Norton) Plain.
- 1—No. 1 Milwaukee Plain.
- 1—No. 1 1/2 LeBlond Plain.
- 1—No. 3 Brown & Sharpe Plain.
- 1—No. 2 Rockford Plain.
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- 1—No. C Becker Vertical.
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- 1—No. 6 Whitney Hand Miller.
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- 1-14"x6' American T. A.
- 2-18"x8' Reed.
- 1-18"x8' American quick change.
- 1-18"x10' Cisco d. b. g., q. c. g.
- 1-24"x8' Boye & Emmes standard.
- 1-20"x8' Monarch.
- 1-24"x12' Hamilton standard.
- 1-18"x24"x64' Rahn Larmon gap.
- 3-26"x10' Le Blond crank shaft.
- 5-Le Blond 17"x8' production.
- 3-20"x9' Wickes production.
- 3-21"x10' Le Blond production.

MILLS

- 1-No. 2 Hendey universal.
- 1-No. 2 Cincinnati universal.
- 2-No. 2 Valley City universal.
- 3-No. 2 Brown & Sharpe plain.
- 3-No. 2 Cincinnati plain.
- 1-12" Cincinnati semi-auto mfg.
- 2-No. 2 Van Norman Duplex.
- 2-No. 4 & No. 5 Becker vertical.
- 2-No. 3 & No. 4 Cincinnati vert.
- 2-Newton spline mills.
- 2-Hendey prod. mills, Lincoln type
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- 1-No. 1 Lambert horizontal.
- 6-Briggs type A. & B.
- 1-No. 14 American plain.
- 2-No. 2, 2-sp. P. & W. profilers.

SHAPERS AND PLANERS

- 1-16" Steptoe, B. G.
- 4-20" Hendey friction.
- 1-20" Steptoe, back gear.
- 2-20" G. & E. cone, back geared.
- 2-24" G. & E. arranged for M. D.
- 1-24" G. & E. cone, back geared.
- 3-20" Kelly, cone, back geared.
- 1-24" Kelly, motor drive with mtr.
- 1-30"x30"x8' Wilson.
- 1-36"x36"x12' Bickett.
- 1-36"x36"x8' Cleveland openside.
- 1-30"x30"x8' Cleveland openside.
- 1-48"x48"x16' D. & H. openside.

GRINDERS

- 6-No. 2 B. & S. Sur. mag. chucks.
- 2-No. 2 B. & S. universal.
- 3-No. 10 B. & S. plain.
- 3-No. 65 Heald cylinder.
- 1-No. 2 W. & M. surface.
- 2-No. 3 W. & M. surface.

- 1-No. 14 P. & W. vert. surface.
- 1-60" Reed Prentice vert. surface.
- 1-22" Heald rot. surf., 16" m. ch.
- 1-Each No. 1 and No. 14 Cincinnati Univ. Tool & Cutter Grinder.
- 1-No. 1 W. & M. Univ. Tool & Cutter Grinder.

DRILLS

- 2-No. 314 Becker heavy duty.
- 3-2 spindle Fosdick H. S., B. B.
- 1-4 spindle Avey H. S., B. B.
- 3-24" Cincinnati sliding head B. G. P. F.
- 2-24" Prentice sl. hd., b. g., p. f.
- 1-26" W. F. & J. Barnes sliding hd., b. g., p. f., tapping attach.
- 1-26" 4-spd. Barnes Camel Back.
- 1-34" Cincinnati Bickford Radial.
- 1-4 Mueller Radial.
- 4-26" W. F. & J. Barnes, sl. hd.

TURRET LATHES & SCREW MCHS.

- 1-No. 6 Warner & S. full Univ.
- 2-No. 2A W. & S.
- 4-2 spindle Jones & Lamson.
- 1-No. 24 Gridley 4 spindle.
- 3-No. 4 Bardons & Oliver.
- 10-Fosters No. 2-3-5-7.
- 2-No. 20 Gisholt semi-auto.
- 3-No. 2 Warner & Swasey.
- 2-No. 4 W. & S. friction head.
- 2-No. 6 W. & S. friction head.
- 3-Springfield Fox Monitors.
- 1-No. 33 New Britain auto., chuck.

PRESSES

- 1-D. D. G-4 Ferracute.
- 1-No. 34 Toledos. s. with trimmer.
- 1-No. 657 Toledo, rack & pinion.
- 1-No. 24 Michigan Horning.
- 1-No. 594 Toledo a. s. geared.
- 1-No. 68 Bliss double action.
- 1-No. 4 Walsch O. B. I.
- 1-No. 4 Bliss Stiles, geared.
- 2-No. 20 Bliss O. B. I.
- 2-Holmes power screw.
- No. 3 Atlas arbor, with stand.

MISCELLANEOUS

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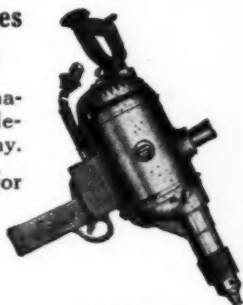
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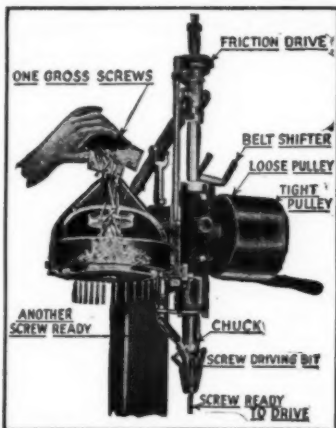


Floor Grinder

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Reynolds
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The Reynolds Machine Company
Dept. H. H., Massillon, Ohio

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Peerless Surfacing Mche. Co., Inc.	43	Triplex Machine Tool Corp.	69
Pettler & Son, P.	115	Tubor, Velick & Co., Inc.	164
Pollard Bros. Mfg. Co.	105	Tucker, W. W. & C. F.	99
Porter-Cable Machine Co.	92	United Hardware & Tool Corp.	95
Procurier Safety Chuck Co.	95	United Machinery & Supply Co.	115
Production Gauge Co.	57	United States Drill Head Co.	85
Racine Tool & Machine Co.	68	United States Machine Tool Co.	85
Rahn-Larmon Co.	14	U. S. Tool Co., Inc.	50
Randle Machinery Co.	127	Used and Rebuilt Machinery	115 to 170
Reed-Prentice Corporation	131	Walls Sales Corporation	75
Reeve-Fritts Company	125	Walton Co.	83
Reisinger Machine Tool Corp.	103	Wardwell Manufacturing Co.	59
Reliance Elect. & Engineering Co.	2	Wayne Machinery Co.	140
Reliance Mch. Sales Co.	122	Welding Appliance Co.	87
Reynolds Machine Company	173	Wertman Machinery Co., M. A.	159
Rhodes Manufacturing Co.	29	West Penn Machinery Co.	118
Rickert-Shafer Co.	33	Western Tool & Mfg. Co.	48
Riverside Machinery Depot	161	White Machinery Co., A. D.	152
Rockford Iron Works	72	Whitney Metal Tool Co.	52
Rogers & Co., Samuel C.	104	Wilson, K. R.	53
Rosenfeld Machinery Co.	115	Winterer, Herman L.	119
		Winterhoff Tool & Machine Co.	82
		Witek Manufacturing Co.	56
		Yohe Supply Co., Wm. S.	113

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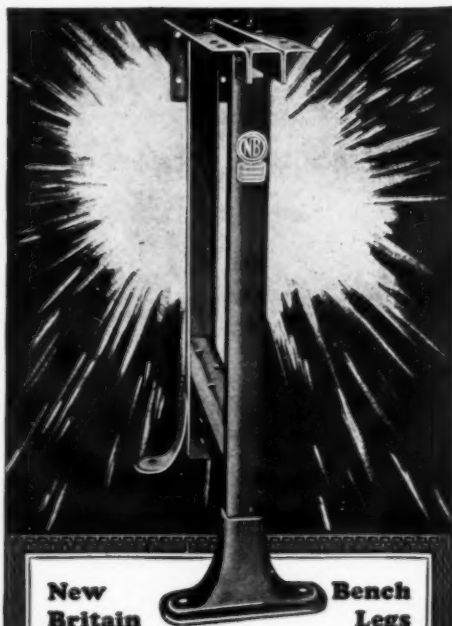
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